Chapter
1

Revision

Exercise 1 A

1. Mark the periods and then write in words.

a. 84,280 → Eighty four thousand two hundred eighty.

b. 74,392 → Seventy four thousand three hundred twenty two.

c. 4,42,750 → Four lakh forty two thousand seven hundred fifty.

d. 4,00,060 → Four lakh sixty.

2. Write these numbers in figures using commas.

a. 70,603 **b.** 2,07,019

3. Write the numbers in ascending order.

a. 34,805 < 1,43,508 < 1,50,834 < 4,38,501

b. 12,761 < 20,761 < 71,126 < 1,02,761

4. Write the numbers in descending order.

a. 2,73,658 > 37,658 > 26,358 > 23,764

b. 1,02,505 > 1,00,525 > 1,00,255 > 10,525

5. Round off the numbers to the nearest 10, 100 and 1000.

		10	100	1000
a.	8788	8790	8800	9000
b.	26925	26930	27000	27000

6. Write the answer as Roman Numbers.

a. VIII b. XXI c. XXXVII d. XCIV

7. Add or subtract the following numbers.

a.

	T Th	Th	H	T	O
	1	1		1	
	5	6	7	3	7
+	2	8	4	1	9
	8	5	1	5	6

b.

	T Th	Th	H	T	O
	1	1		1	
	4	6	4	1	5
+	2	1	0	6	3
	6	7	4	7	8

c.

	T Th	Th	H	T	O
			10	10	
		0	7	2	10
	3	~~9~~	~~8~~	~~3~~	4
–	1	3	9	7	5
	2	5	8	5	9

d.

	T Th	Th	H	T	O
	7	9	9	9	10
	~~8~~	0	0	0	0
–	4	9	3	4	8
	3	0	6	5	2

8. Find the estimated product of 48 and 31 by rounding off each number to the nearest ten.

	Th	H	T	O
			4	8
×			3	1
			4	8
+	1	4	4	×
	1	4	8	8

Rounding off nearest ten = 1500

9. Solve the following.

a.

	Th	H	T	O
		3	2	
		5	6	4
×				5
	2	8	2	0

b.

	T Th	Th	H	T	O
			1		
		8	2	5	1
×					3
	2	4	7	5	3

c.

	Th	H	T	O
		6	0	0
×			1	2
	1	2	0	0
+	6	0	0	×
	7	2	0	0

d.

	L	T Th	Th	H	T	O
				1		
			1	2	5	1
×				1	1	8
		1	0	0	0	8
		1	2	5	1	×
+	1	2	5	1	×	×
	1	3	7	6	1	8

e.

22 1300 59
−110
200
− 198
2

f.

99 111 1
− 99
12

g.

440 606 1
−440
166

h.

181 257 1
−181
×76

10. Fill in the missing digits.

a.

4 958 239
−8
15
− 12
38
− 36
2

b.

7 926 132
−7
22
− 21
16
− 14
2

c.

9 8941 993
−81
84
− 81
31
− 27
4

11. Which of the following numbers are factors of 48?

1 2 3 4 5 6 7 8 9

12. Match the following.

a.	LCM of 6 and 12	**A.**	35
b.	The greatest factor of 48	**B.**	48
c.	3rd odd multiple of 7	**C.**	90
d.	HCF of 9 and 10	**D.**	12
e.	A common multiple of 9 and 10	**E.**	1

13. Find the factors of each of the following using multiplication method.

a. 10 → 1, 2, 5, 10

b. 24 → 1, 2, 3, 4, 6, 8, 12, 24

c. 38 → 1, 2, 19, 38

d. 44 → 1, 2, 4, 11, 22, 44

e. 56 → 1, 2, 4, 7, 8, 14, 28, 56

14. Cross numbers that are divisible by the number in the circle. Use divisibility test.

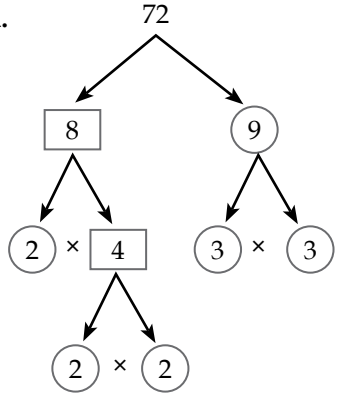
a. 25, 80, 135, 425 are divisible by 5.

b. 39, 72, 243, 216 are divisible by 3.

c. 18, 180, are divisible by 9.

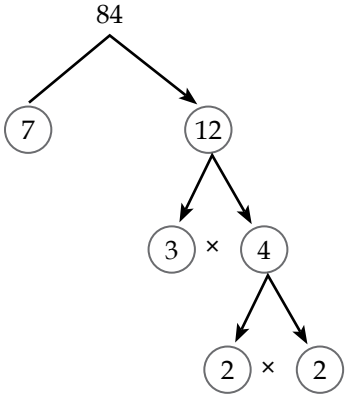
15. Complete the factor tree and express each number as a product of prime numbers.

a.



72 = 2 × 2 × 2 × 3 × 3

b.



84 = 2 × 2 × 3 × 7

16. Fill in the blanks.

a. $\frac{1}{\cancel{3}}$ × 18 = 6

b. 8

c. $\frac{24}{28}$

d. Less

e. $1\frac{3}{4}$

Chapter
2

Large Numbers

Exercise 2 A

Periods	Crores		Lakhs		Thousands		Ones		
Place	Ten Crores	Crores	Ten Lakhs	Lakhs	Ten Thousands	Thousands	Hundreds	Tens	Ones
76, 40,002			7	6	4	0	0	0	2
46, 89, 553			4	6	8	9	5	5	3
6, 58, 00, 007		6	5	8	0	0	0	0	7
5, 98, 43, 210		5	9	8	4	3	2	1	0
3, 52, 48, 916		3	5	2	4	8	9	1	6
14, 90, 088			1	4	9	0	0	8	8
1, 00, 05, 984		1	0	0	0	5	9	8	4
9, 72, 834				9	7	2	8	3	4
2, 46, 87, 678		2	4	6	8	7	6	7	8
76, 23, 42, 227	7	6	2	3	4	2	2	2	7
8, 92, 34, 627		8	9	2	3	4	6	2	7
92, 46, 87, 9, 597	9	2	4	6	8	7	5	9	7

Numbers in words

1. Write the following numbers in place value chart. Also, write the each number in words.

a. Seventy six lakhs forty thousands two

b. Forty six lakhs eighty five thousands five hundred fifty three.

c. Six crores fifty eight lakhs seven.

d. Five crores ninety eight lakhs forty three hundred two hundred ten.

e. Three crores fifty two lakhs forty eight thousand nine hundred sixteen.

f. Fourteen lakhs ninety thousand eighty eight.

g. One crores five thousands nine hundred eighty four.

h. Nine lakhs seventy two thousand eight hundred thirty four.

i. Two crores forty six lakhs eighty seven thousands six hundred seventy eight.

j. Seventy six crores twenty three lakhs forty two thousand two hundred twenty seven.

k. Eight crores ninety two lakhs thirty four thousand six hundred twenty seven.

l. Ninety tow crores forty six lakhs eighty seven thousand five hundred ninety seven.

2. Write the numbers using commas for the following number names.

a.	7, 37, 26, 502	**b.**	81, 00, 70, 013	**c.**	45, 98, 534
d.	96, 07, 005	**e.**	69, 23, 141	**f.**	36, 083
g.	91, 60, 52, 715	**h.**	3, 08, 000	**i.**	88, 50, 03, 029

3. Fill in the blanks with the missing numbers to continue the pattern.

a. 7497285 ; 7492285 **b.** 8, 75, 15, 051 ; 8, 76, 15, 051

c. 47, 27, 864 ; 8, 76, 15, 051 **d.** 3, 63, 49, 001 ; 3, 73, 49, 001

4. Write the successor of

a. Successor of 39, 99, 999 = 39, 99, 999+1 = 40, 00, 000

b. Successor of 99, 99, 999 = 99, 99, 999+1 = 1, 00, 00, 000

c. Successor of 1, 00, 000 = 1, 00, 000+1 = 1, 00, 001

d. Successor of 54, 926 = 54, 926+1 = 54, 927

5. Write the predecessor of

a. Predecessor of 1, 00, 00, 000 = 1, 00, 00, 000–1 = 99, 99, 999

b. Predecessor of 7, 00, 001 = 7, 00,001–1 = 7, 00, 000

c. Predecessor of 9, 34, 90, 000 = 9, 34, 90, 000–1 = 9, 34, 89, 999

d. Predecessor of 4, 89, 93, 478 = 4, 89, 93 478–1 = 4, 89, 93, 477

6. How many 8-digit numbers are there?

The largest smallest number of 8 digit = 9, 99, 99, 999

And the smallest numbers of 8 digit = 1, 00, 00, 000

Total number of 8 digits = greatest number–smallest number+1

= 9, 99, 99, 999–1, 00, 00, 000+1 = 9, 00, 00, 000

Exercise 2 B

1. Write the following numbers using commas in Indian as well as in International system of numerations. Also, mark period of each of the given number.

Indian hunger system.

a.

Period	C	L	Th	O
	3	49	87	526

Using commas :– 3, 49, 87, 526

b.

Period	C	L	Th	O
	90	25	32	831

Using commas :– 90, 25, 32, 831

c.

Period	C	L	Th	O
	2	17	35	481

Using commas :– 2, 17, 35, 481

d.

Period	C	L	Th	O
	16	50	91	800

Using commas :– 16, 50, 91, 800

e.

Period	C	L	Th	O
		71	21	106

Using commas :– 71, 21, 106

f.

Period	C	L	Th	O
		13	20	172

Using commas :– 13, 20, 122

g.

Period	C	L	Th	O
		82	10	122

Using commas :– 82, 10, 122

h.

Period	C	L	Th	O
			85	960

Using commas :– 85, 960

i.

Period	C	L	Th	O
	30	21	45	733

Using commas :– 30, 21, 45, 733

j.

Period	C	L	Th	O
	92	87	35	631

Using commas :– 92, 87, 35, 631

k.

Period	C	L	Th	O
		70	21	040

Using commas :– 70, 21, 040

l.

Period	C	L	Th	O
	7	21	32	869

Using commas :– 7, 21, 32, 869

International system of Numerations.

a.

Period	Millions		Thousands			One		
Places	TM	M	HTH	TTH	TH	H	T	O
Place Value	3	4	9	8	7	5	2	6

Using commas :– 34, 987, 526

b.

Period	Millions			Thousands			One		
Places	HM	TM	M	HTH	TTH	TH	H	T	O
Place Value	9	0	2	5	3	2	8	3	1

Using commas :– 902, 532, 831

c.

Period	Millions		Thousands			One		
Places	TM	M	HTH	TTH	TH	H	T	O
Place Value	2	1	7	3	5	4	8	1

Using commas :– 21, 735, 481

d.

Period	Millions			Thousands			One		
Places	HM	TM	M	HTO	TTH	TH	H	T	O
Place Value	1	6	5	0	9	1	8	0	0

Using commas :– 165, 091, 800

e.

Period	Millions		Thousands		One		
Places	TM	M	TTH	TH	H	T	O
Place Value			7	2	1	0	6

Using commas :– 722, 106

f.

Period	Millions			Thousands			One		
Places	HM	TM	M	HTH	TTH	TH	H	T	O
Place Value			1	3	2	0	1	7	2

Using commas :– 1, 320, 172

g.

Period	Millions		Thousands			One		
Places	TM	M	HTH	TTH	TH	H	T	O
Place Value		8	2	1	0	1	2	2

Using commas :– 8, 210, 122

h.

Period	Millions		Thousands			One		
Places	TM	M	HTH	TTH	TH	H	T	O
Place Value				8	5	9	6	0

Using commas :– 85, 960

i.

Period	Millions			Thousands			One		
Places	HM	TM	M	HTH	TTH	TH	H	T	O
Place Value	3	0	2	1	4	5	7	3	3

Using commas :– 302, 145, 783

j.

Period	Millions			Thousands			One		
Places	HM	TM	M	HTH	TTH	TH	H	T	O
Place Value	9	2	8	7	3	5	6	3	1

Using commas :– 928, 735, 631

k.

Period	Millions		Thousands			One		
Places	TM	M	HTH	TTH	TH	H	T	O
Place Value		7	0	2	1	0	4	0

Using commas :– 7, 021, 040

l.

Period	Millions			Thousands			One		
Places	HM	TM	M	HTH	TTH	TH	H	T	O
Place Value		7	2	1	3	2	8	6	9

Using commas :– 72, 132, 869

2. Write the numeral for each of the following.

a. 100, 076, 915 **b.** 10, 003, 516

c. 820,414, 000 **d.** 20, 007, 080

3. Write the digits of the given numbers in Indian place value chart.

	Number	Crores		Lakhs		Thousands		Ones		
a.	321612				3	2	1	6	1	2
b.	2258213			2	2	5	8	2	1	3
c.	6201035			6	2	0	1	0	3	5
d.	9520034			9	5	2	0	0	3	4

4. Write the digits of the given numbers in the appropriate place in the International place value chart.

	Number	Millions			Thousands			Ones		
a.	317122				3	1	7	1	2	2
b.	3360163			3	3	6	0	1	3	6
c.	3298192			3	2	9	8	1	9	2
d.	56162703		5	6	1	6	2	7	0	3

5. Rewrite the following numbers using commas in International system of numeration.

a. 268,128 b. 3,562,810 c. 958,031,269

d. 4,522,163 e. 22,972,120 f. 66,281,236

6. Write the number names of the following numerals.

a. Two million five hundred sixty three thousand four hundred seventy five.

b. One hundred forty million nine hundred five thousand three hundred nineteen.

c. Seven hundred ninety million six hundred four thousand two hundred thirty one.

d. Two hundred thirty one million six hundred thousand one hundred forty eight.

e. Five hundred sixty million one hundred and ten.

Exercise 2 C

1. Write the place value of the encircled digits.

a. 83⑨543096 → 9000000

b. ⑥3280588 → 60000000

c. 68354⑥789 → 600

d. 7④3000138 → 40000000

e. 58382716⓪ → 0

2. Write the face value of the encircled digits.

a. 725⑧0896 → 8

b. 97622⓪990 → 0

c. 451④59628 → 4

d. ①76233005 → 1

e. 888⑧88888 → 8

3. Find the sum of the place values of three eight's in the number 808438920.

Number								
8	0	8	4	3	8	9	2	0

Place Value
800000000
8000000
8000

The sum of the three eight place values =

	8	0	0	0	0	0	0	0	0
			8	0	0	0	0	0	0
+	8	0	8	0	0	0	0	0	0

4. State the place value of the encircled digits.

a. 9⑨5685246 9 C

b. 60⑧789529 8 T Lakhs

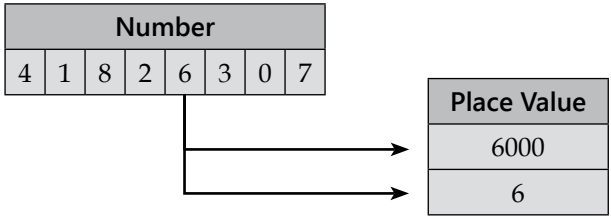
c. 1234567⑧9 8 Tens

d. 600④00402 4 Lakhs

e. ⑥84892522 6 T C

f. 3745②8214 2 Ten Thousands

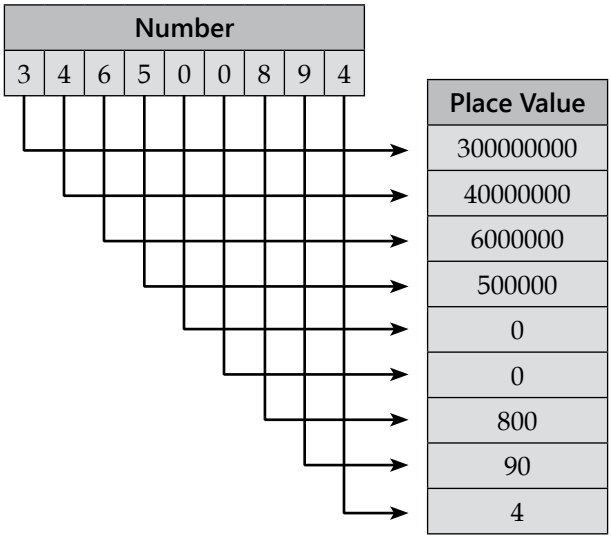
5. Find the product of the place value and face value of the digit 6 in the number 41826307.



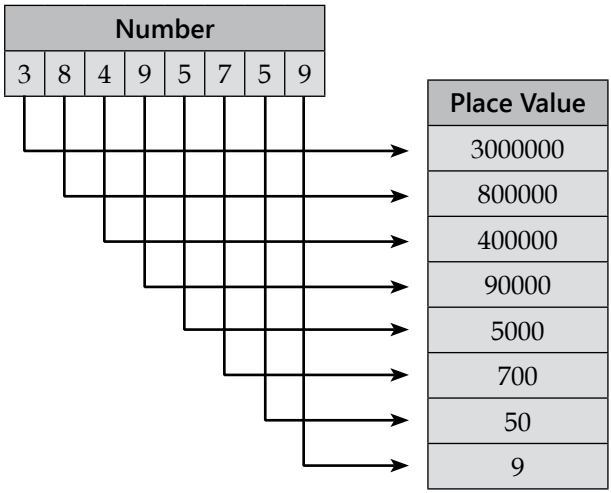
The product of place value and face value of 6 = 600 × 6 = 36000

6. Write the place value of each digit in the numbers given below.

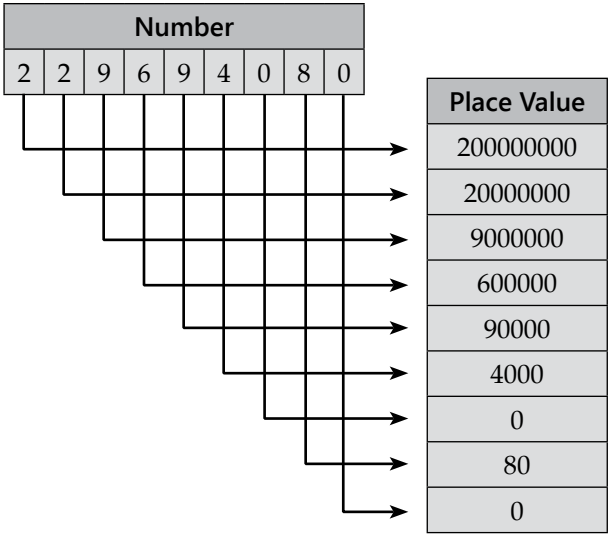
a.



b.



c.



Exercise 2 D

1. Write each of the following numbers in the expanded form.

a. 7553926

= 7 Ten lakhs + 5 lakhs + 5 ten thousand + 3 thousand + 9 hundreds + 2 ten + 6 ones

= 7 × 10, 00, 000 + 5 × 1, 00, 000 + 5 × 10, 000 + 3 × 1, 000 + 9 × 100 + 2 × 10 + 6 × 1

= 70, 00, 000 + 5, 00, 000 + 50, 000 + 3, 000 + 900 + 20 + 6

b. 8, 30, 69, 435

= 8 crores + 3 ten lakhs + 0 lakhs + 6 ten thousands + 9 thousands + 4 hundreds + 3 tens + 5 ones

= 8 × 1, 00, 00, 000 + 3 × 10, 00, 00, 000 + 0 × 1000000 + 6 × 10, 000 + 9 × 1, 000 + 4 × 100 + 3 × 10 + 5

= 80000000 + 3000000 + 0 + 60, 000 + 9, 000 + 400 + 30 + 5

C. 1, 80, 05, 939

= 1 crore + 8 ten lakhs + 0 lakhs + 0 ten thousand + 5 thousand + 9 hundred + 3 tens +9 ones

= 1 × 100, 00, 000 + 8 × 10, 00, 000 + 0 × 1, 00, 000 + 0 × 10, 000 + 5 × 1,000 + 9 × 100 + 3 × 10 + 9 × 1

= 1, 00, 00, 000 + 80, 00, 000 + 0 + 0 + 5000 + 900 + 30 + 9

d. 99, 50, 49, 286

= 9 ten crores + 9 crores + 5 ten lakhs + 0 lakhs + 4 ten thousand + 9 thousand + 2 hundred + 8 tens + 6 ones

= 9 × 10, 00, 00, 000 + 9 × 1, 00, 00, 000 + 5 × 10, 00, 000 + 0 × 1, 00, 000 + 4 × 10, 000 + 9 × 1, 000 + 2 × 100 + 8 × 10 + 6 × 1

= 90, 00, 00, 000 + 9, 00, 00, 000 + 50, 00, 000 + 0 + 4 × 10, 000+ 9, 000+ 200 + 80 + 1

e. 75, 93, 20, 676

= 7 ten crores + 5 crores + 9 ten lakhs + 3 lakhs + 2 ten thousand + 0 thousand + 6 hundred + 7 tens + 6 ones

= 7 × 10, 00, 00, 000 + 5 × 1, 00, 00, 000 + 9 × 1000000 + 3 × 100000 + 2 × 10000 + 0 × 1000 + 6 × 100 + 7 × 20 + 6 × 1

= 70, 00, 00, 000 + 5, 00, 00, 000 + 90, 00, 000 + 3 × 1, 00, 000 + 20, 000 + 600 + 70 + 6

f. 41, 48, 90, 567

= 4 ten crores + 1 crores + 4 ten lakhs + 8 lakhs + 9 ten thousand + 0 thousand + 5 hundred + 6 tens + 7 ones

= 4 × 10, 00, 00, 000 + 1 × 1, 00, 00, 000 + 4 × 10, 00, 000 + 8 × 1, 00, 000 + 9 × 10, 000 + 0 × 1, 000 + 5 × 100 + 6 × 10 + 7 × 1

= 40, 00, 00, 000 + 2, 00, 00, 000 + 40, 00, 000 + 500000 + 90000+ 500 + 60 + 7

g. 38, 05, 492

= 3 ten lakhs + 8 × lakhs + 0 ten thousand + 5 thousand 4 hundred + 9 tens + 2 ones

= 3 × 10, 00, 000 + 8 × 1, 00, 000 + 0 × 10, 000 + 5 × 1, 00 + 4 × 100 + 9 × 10 + 2 × 1

= 3000000 + 800000 + 5000 + 400 + 90 + 2

h. 1, 96, 43, 000

= 1 crores + 9 ten lakhs + 6 lakhs + 4 ten thousand + 3 thousand + 0 hundred + 0 tens + 0 ones

= 1 × 1, 00, 00, 000 + 9 × 10, 00, 000 + 6 × 1, 00, 000 + 4 × 10, 00 + 3 × 1, 000 + 0 × 100 + 0 × 100 + 0 × 1

= 1, 00, 00, 000 + 90, 00, 000 + 6, 00, 000 + 40, 000 + 3, 000

i. 73, 45, 68, 291

= 7 ten crores + 3 crores + 4 ten lakhs + 5 lakhs + 6 ten thousand + 8 thousand + 2 hundred + 9 tens + 1 one

= 7 × 10, 00, 00, 000 + 3 × 1, 00, 00, 000 + 4 × 10, 00, 000 + 5 × 1, 00, 000 + 6 × 10, 000 + 8 × 1000 + 2 × 100 + 9 × 10 + 1 × 1

= 70, 00, 00, 000 + 3, 00, 00, 000 + 40, 00, 000 + 5, 00, 000 + 60, 000 + 8, 000 + 200 + 90 + 1

j. 5, 21, 84, 653

= 5 crore +2 ten lakhs + 1 lakhs + 8 ten thousand + 4 thousand + 6 hundred + 5 tens 3 ones

= 5 × 1, 00, 00, 000 + 2 × 10, 00, 000 + 1 × 1, 00, 00 + 8 × 10, 000 + 4 × 1000 + 6 × 100 + 5 × 10 + 3 × 1

= 5, 00, 00, 000 + 20, 00, 000 + 1, 00, 000 + 80, 000 + 4, 000 + 600 + 50 + 3

2. Write each of the following in short form.

a. The short form of

= 90, 00, 00, 000 + 50, 00, 000 + 20, 000 + 0 = 90, 50, 20, 000

b. The short form of

= 90, 00, 00, 000 + 6, 00, 00, 000 + 2, 00, 000 + 70, 000 + 800 + 6

= 96, 02, 70, 806

c. The short form of

= 60, 00, 00, 000 + 700 + 3 = 60, 00, 00, 703

d. The short form of

= 6 crores + 5 ten lakhs + 6 lakhs + 3 ten thousand + 2 thousand + 4 hundreds + 8 ten + 0 ones

= 6, 00, 00, 000 + 50, 00, 000 + 6, 00, 000 + 30, 000 + 2, 000 + 400 + 80 +0

= 6, 56, 32, 480

e. The short form of

= 2 10, 00, 00, 000 + 1 × 1, 00, 00, 000 + 4 × 10, 00, 000 + 1 × 100000 + 6 × 10000 + 7 × 1000 + 2 × 10 + 1 × 1

Exercise 2 E

1. Find out which is smaller and greater. Fill in the blanks with < or >.

a.

10, 02, 455	9, 87, 897
7-digit number	6-digit number

Since, 7 digits are more than 6 digit

so, 10, 02, 455 is grater or 10, 02, 455 > 9, 87, 897

or 9, 87, 897 is smaller or 9, 87, 897 < 10, 02, 455

b. 3 5 6 7 2 4 1 7 | 3 5 6 7 0 5 9 1

Same

Same

Same

Same

>

So, 3, 56, 72, 417 > 3, 56, 70, 591

Since 2 is greater than 0

So, 3, 56, 72, 417 is greater than 3, 56, 70, 591 and 0 is smaller than 2

So, 3, 56, 70, 591 is smaller than 3, 56, 72, 417

c.

8, 92, 76, 581	10, 16, 25, 303
8-digit number	9-digit number

Since 9 digits are more than 8 digit

So, 10, 16, 25, 303 is greater or 10, 16, 25, 303 > 8, 92, 76, 581

or 8, 92, 76, 581 is smaller or 8, 92, 76, 58 < 10, 16, 25, 303

d. 8 4 4 6 7 8 7 9 8 | 4 6 5 4 6 3 2 3 1

>

So, 84, 46, 78, 789 > 46, 54, 63, 231

Since, 8 is greater than 4

So, 84, 46, 78, 798 is greater than 46, 54, 36, 231

e. 7 8 5 4 2 8 4 | 2 1 8 4 3 8 7

>

So, 78, 54, 284 > 21, 84, 384

Since, 7 is greater than 2

So, 78, 54, 284 is greater than 21, 84, 384

f.

5, 48, 36, 904	10, 32, 13, 103
8-digit number	9-digit number

Since 9 digit number are more than 8 digit number

So, 10, 32, 13, 103 is greater or 10, 32, 13, 103 > 5, 48, 36, 904

g.

6	1	3	0	5	4	9	0	2

6	1	3	0	4	5	9	8	7

Same

Same

Same

Same

>

So, 61, 30, 54, 902 > 61, 30, 45, 987

Since 5 is greater than 4

So, 61, 30 54, 902 is greater than 61, 30, 45, 987

h.

2, 35, 07, 105	14, 53, 48, 432
8-digit number	9-digit number

Since 9 digit are more than 8 digit

So, 14, 53, 48, 432 is greater than 2, 35, 07, 105

or 14, 53, 48, 432 > 2, 35, 07, 105

i.

1	6	3	5	1	3	5	1

1	6	5	1	6	5	1	6

Same

Same

>

So, 1, 63, 51, 351 < 1, 65, 16, 516

Since 5 is greater than 3

So, 1, 65, 16, 516 is greater than 1, 63, 51, 351

j.

2	8	7	1	3	2	9	7	8

1	8	4	5	9	8	2	3	7

>

So, 28, 71, 32, 987 > 18, 45, 98, 237

Since 2 is greater than 1

So, 28, 71, 32, 978 is greater than 18, 45, 98, 237

2. Arrange the following groups of numbers in ascending order.

a. The smallest number is 16, 54, 984

The largest number is 5, 67, 98, 132

The ascending order is

16, 54, 984 < 45, 45, 321 < 71, 26, 865 < 84, 81, 654 < 5, 67, 98, 132

b. The smallest number is 94, 98, 367

The greater number is 8, 87, 21, 233

The ascending order is

94, 98, 367 < 1, 32, 87, 167 < 3, 45, 17, 856 < 5, 49, 79, 863 < 8, 87, 21, 233

c. The smallest number is 3, 98, 439

The greater number is 14, 51, 853

The ascending order is

3, 98, 439 < 7, 54, 656 < 8, 41, 245 < 9, 45, 296 < 14, 51, 853

d. The smallest number is 9, 81, 41, 511

The greater number is 89, 14, 65, 432

The ascending order is

9, 81, 41, 511 < 9, 89, 19, 877 < 9, 91, 79, 162 < 9, 94, 17, 355 < 89, 14, 65, 432

e. The smallest number is 8, 11, 49, 836

The greatest number is 95, 52, 69, 964

The ascending order is

8, 11, 49, 836 < 20, 49, 22, 526 < 47, 98, 61, 321 < 54, 69, 13, 974 < 95, 52, 69, 964

3. Arrange the following groups of numbers in descending order.

a. The largest number is 12, 96, 54, 504

The smallest number is 27, 89, 989

The descending order is

12, 96, 54, 504 > 2, 13, 45, 604 > 1, 29, 65, 785 > 30, 76, 898 > 27, 89, 989

b. The largest number is 24, 53, 70, 120

The smallest number is 4, 56, 39, 917

The descending order is

24, 53, 70, 120 > 24, 53, 68, 007 > 9, 32, 16, 724 > 5, 37, 91, 326 > 4, 56, 39. 917

c. The largest number is 62, 79, 05, 623

The smallest number is 6, 27, 90, 569

The descending order is

62, 79, 05, 623 > 62, 79, 05, 480 > 6, 27, 91, 023 > 6, 27, 90, 931 > 6, 27, 90, 569

d. The largest number is 6, 30, 82, 319

The smallest number is 99, 876

The descending order is

6, 30, 82, 319 > 5, 06, 43, 702 > 3, 07, 28, 512 > 2, 71, 69, 238 > 79, 87, 689

e. The largest number is 2, 31, 50, 015

The smallest number is 99, 876

The descending order is

2, 31, 50, 015 > 2, 31, 49, 926 > 75, 46, 891 > 75, 46, 786 > 99, 876

Exercise 2 F

1. Round off to nearest 1000 each of the following numbers:

a. Rounding place is the thousand place. So, we have to look at the digit on hundreds place.

The digit at the hundreds place is 5 = 5. There fores the thousands digit will be 5 and the digit 5, 2, 6 will be replaced by 0.

Thus 14526 is rounded off to nearest thousand as 15000.

b. Rounding place the 1, 000. The digit at the hundreds place is 5 = 5. Therefore the thousands digit will be 7 and the digit 5, 7 and 0 will be replaced by 0.

Thus 56570 is rounded off to nearest thousand as 57000.

c. Rounding place is the 1000. The digit at the hundreds place is 5 = 5. There fore the thousands digit will be 9 and the digit 5, 9 and 6 will be replaced by 0.

Thus 6, 18, 596 is rounded off to nearest thousand as 6, 19, 000.

d. Rounding place is the 1000. The digit at the hundred place is there fore the thousands digit will be 2 and the digit 9, 2 and 5 will be replaced by 0.

Thus 81, 925 is rounded off to nearest thousand as 82, 000.

e. Rounding place is the 1000. The digit at he hundreds place is therefore the thousands digit will be 3 and the digit 9, 2 and 5 will be replaced by 0.

Thus, 772925 is rounded off to nearest thousand as 7, 73, 000.

2. Round off to nearest 10000 each of the following numbers.

a. Rounding place is the ten thousand place. The digit at the thousands place is 3 < 5 there fore, the ten thousands digit will be same and the digit 3, 8, 9,5 will be replaced by 0.

Thus 163895 is rounded off to nearest ten thousand as 160000.

b. Rounding place is ten thousand place. The digit at the thousand place is 8 < 5 there fore, the ten thousands digit will be same and the digit 3, 8, 2 and 5 will be replaced by 0.

Thus 7983825 is rounded off to nearest ten thousand as 7990000.

c. Rounding place is the ten thousand place. The digit at the thousand place is equal to 5 there fore the ten thousands digit will be 9 and the digit 5, 2, 5 and 6 will be replaced by 0.

Thus 1785256 is rounded off to nearest ten thousand as 1790000.

d. Rounding place is the ten thousand place. The digit at the thousand place is equal to 5 there fore the ten thousands digit will be 2 and the digit 5, 2, 5 and 9 will be replaced by 0.

Thus 715259 is rounded off to nearest ten thousand as 720000.

e. Rounding place is the ten thousand place. The digit at the thousand place is 9 > 5 there fore the ten thousand digit will be 6 and digit 9, 8, 7 and 6 will be replaced by 0.

Thus 559876 is rounded off to nearest ten thousand ad 560000.

3. Round off to nearest 100000 each of the following numbers.

a. Rounding place is the lakh. The digit at the ten thousand place is 2 < 5 there fore the lakhs digit will be same 5 and the digit 2, 7, 3, 7 and 2 will be replaced by 0.

Thus 627372 is rounded off to nearest lakh as 6, 00, 000.

b. Rounding place is the lakhs. The digit at the ten thousand place is 2 < 5 there fore the lakh digit will be same and the digit 2, 9, 9, 0 and 3 will be replaced by 0.

Thus 829903 is rounded off to nearest lakh ad 800000.

c. Rounding place is the lakh. The digit at the ten thousand place is 8 > 5 there fore the lakh digit will be 3 and the digit 8, 9, 2, and 3 will be replaced by 0.

Thus 289923 is rounded off to nearest lakh as 300000.

d. Rounding place is the lakh. The digit at the ten thousand place is 7 > 5 there fore the lakh digit will be 2 and the digit 7, 4, 3, 7 and 2 will be replaced by 0.

Thus 174372 is rounded off to nearest lakh as 2, 00, 000.

e. Rounding place is the lakh. The digit at the ten thousand place is 3 < 5 there fore the lakh digit will be 4 and the digit 3, 7, 2, 8 and 4 will be replaced by 0.

Thus 537284 is rounded off to nearest lakh as 5, 00, 000.

Value Based Question

Twelve lakh thirty four thousand five hundred sixty one.

H O T S

1. Successor of 81500999 = 81500999 + 1 = 81501000

81501000 is the successor of 81500999

2. Predecessor of 10000000 = 10000000 – 1 = 9999999

9999999 is the predecessor of 10000000

3. 10 lakhs is equal to 1 million.

4. 1 crore is equal to 10 millions.

5. 45, 54, 454, < 54, 54, 545 < 54, 54, 554 < 4, 55, 45, 455 < 4, 54, 54 545

6. 9, 25, 306

7. 22211100

8. 987606789

Mental Maths

1. The period crores contains places

Period	Crores	
Places	Ten crore	Crore

2. Always read a numbers from right to left.

3 1 million = 10 lakhs

So, 1 million + 10 lakhs will be 2 millions.

4. 7, 34, 67, 630; this number is written in Indian number system and 73, 467, 630 is written in international number system so, These are equal.

5. After adding 30, 00, 000 we get the next number.

Chapter
3

Roman Numerals

Exercise 2 A

1. Write the following in Hindu-Arabic System.

	Roman number	Hindu- Arabic system
a.	III	3
b.	XX	20
c.	XL	40
d.	XXXV	35
e.	LIV	54
f.	LXIV	69
g.	VL	45
h.	XXVIII	27
i.	XC	90
j.	CIX	109
k.	XCVIII	98
l.	LXXXVIII	87

2. Write the following in Roman Number System.

	Hindu- Arabic system	Roman numerals
a.	9	IX
b.	17	XVII
c.	23	XXIII
d.	36	XXXVI
e.	41	XLI
f.	52	LII
g.	67	LXVII
h.	75	LXXV
i.	83	LXXXIII
j.	94	XCIV
k.	125	CXXV
l.	57	LVII

3. Write True or False.

a. False **b.** False **c.** False **d.** True **e.** False **f.** True

4. Tick (P) the correct answer.

a. i. IX **b.** iii. LXIX **c.** iii. X **d.** i. 7 **e.** iii. M

5. Write the missing number in the following.

a. XXVIII **b.** XLV **c.** XCIII

6. Write the following Roman numerals in the Hindu-Arabic form.

a. LXXIII – 50 + 10 + 10 + 1 + 1 + 1 = 73

b. XCIX – (100 – 10) + (10 – 1) = 99

c. LXXXVI – 50 + 10 + 10 + 10 + 5 + 1 = 86

d. LVII – 50 + 5 + 1 + 1 = 57

e. LXI – 50 + 10 + 1 = 61

f. LIX – 50 + (10 – 1) = 59

7. What time is shown by the following clocks?

a. 4 : 50 p.m b. 12 : 30 C. 7 : 45

8. Write the Hindu-Arabic numeral which is one more than the Roman numeral given below.

a. 65 **b.** 69 **c.** 135 **d.** 502

Exercise 3 B

1. Fill in the '<', '=' or '>'.

a. CD = 500 – 100 = 400

CCCXC = 100 + 100 + 100 + (100 - 10) = 300 + 90 = 390

400 > 390

CD > CCXC

b. LIX = 50 + (10 – 1) 50 + 9 = 59

LXXI = 50 + 10 + 10 + 1 = 71

59 < 71

LXI < MCII

c. MCI = 1000 + 100 + 1 = 1101

MCII = 1000 + 100 + 1 + 1 = 1102

1101 < 1102

MCI < MCII

d. XCIII = (100 – 10) + 1 + 1 + 1= 90 + 3 = 93

CXIII = 100 + 10 + 1 + 1 + 1 = 113

93 < 113

XCIII < CXIII

e. CD = (500 – 100) = 400

CCC = 100 + 100 + 100 = 300

400 > 300

CD > CCC

f. CCLIX = 100 + 100 + 50 + (10 – 1)

= 100 + 100 + 50 + 9 = 259

CCXLI = 100 + 100 + (50 – 10) + 1

= 100 + 100 + 40 + 1 = 241

259 > 241

CCLIX > CCXLI

g. CDXL = (500 – 100) + (50 – 10)

400 + 40 = 440

CDLX = (500 – 100) + 50 + 10

= 400 + 60 = 460

440 < 460

CDXL < CDLX

h. CXLIX = 100 + (50 – 10) + (10 – 1)

= 100 + 40 + 9 = 149

CLXXXIX = 100 + 50 + 10 + 10 + 10 + (10 – 1)

= 100 + 50 + 10 + 10 + 10+ 9 = 189

149 < 189

CXLIX < CLXXXIX

i. ...

2. Write the following in Hindu-Arabic System.

a. CXCII = 100 + (100 – 10) 1 + 1

= 100 + 90 + 1 + 1 = 192

b. XCS = (100 – 10) + 1

= 90 + 1 = 91

c. LXIX = 50 + 10 + (10 – 1)

= 50 + 10 + 9 = 69

d. CCCXIII = 100 + 100 + 100 + 10 + 1 + 1 + 1
= 313

e. XCII = (100 – 10) + 1 + 1
= 90 + 1 + 1 = 92
XV = 10 + 5 = 15
XCII – XV = 92 – 15 = 77
77 = LXXVII
∴ XCII – XV = LXXVII

f. XLIX = 49
XXXIX = 39
XLIX + XXXIX = 49 + 39 = 88
88 = LXXXVIII
∴ XCIX + XXXIX = LXXXVIII

g. LVII = 57
XXIX = 29
LVII – XXIX = 57 – 29 = 28
28 = XXVIII
∴ LVII – XXIV = XXVIII

h. LIV = 54
VI = 6
LIV + VI = 54 + 6 = 60
60 = LX
∴ LIV + VI = LX

i. CVIII = 108
CXLVI = 146
CVIII + CXLVI = 108 + 146 = 300
300 = CCC
∴ CVIII + CXLVI = CCC

3. Write the following in Roman Numerals.

a. LXXIX **b.** CLCCCVIII **c.** CCXLVII **d.** CXCVI
e. CCCLXV **f.** CCCXCVIII **g.** CDXLIX **h.** CDXCVI
i. CCCXLIV **j.** CDLXVI **k.** DC **l.** CCLXX

4. Tick (✓) the correct Roman numerals and cross (×) the wrong ones.

a. CXCVI [×] b. VX [×] c. CDXL [✓]

d. CVX ✗ **e.** CVV ✗ **f.** ICC ✗

g. XLIX ✓ **h.** CCCXC ✓ **i.** LLIV ✗

j. CXXXXVI ✗ **k.** CCCC ✗ **l.** DLIV ✓

5. Answer the following.

a. There are seven symbols in Roman number system.

b. The Roman number for he smallest a 4 digit no is M.

c. II, III, IV, V, VI, VIII are never written on left of X.

d. These numerals are – IV, VI, VII, VIII.

6. Add the following Roman Numerals.

a. IV = 4

VI = 6

IV + VI = 4 + 6 = 10

10 = X

∴ XX + XI = XXXI

b. XX = 20

XI = 11

XX + XI = 20 +11 = 31

31 = 11

∴ XX + XI = XXXI

c. XXX = 30

XIII = 13

XXX + XIII = 30 + 13 = 43

43 = XLIII

∴ XXX + XIII = XLIII

d. XL = 40

XV = 15

XL + XV = 40 + 15 = 55

55 = LV

∴ XL + XV = LV

7. Subtract the following Roman Numerals.

a. XLI = 41

XXV = 25

XLI – XXV = 41 – 25 = 16

16 = XVI

∴ XLI – XXV = XVI

b. XXVIII = 28

XXVI = 26

XXVIII – XXVI = 28 – 26 = 2

2 = II

∴ XXXVIII – XXVI = II

c. CV = 105

LI = 51

CV – LI = 105 – 51 = 54

54 = LIV

∴ CV – LI = LIV

d. XLI = 41

XL = 40

XLI – XL = 40 – 40 = 1

1 = I

∴ XLI – XL = I

HOTS

1. The Roman number of 2345 is MMCCCXLV.

2. The Hindu-Arabic of MDCCXC is 1790

3. The next Roman numerals in the series will be V + II = VII

4. All symbols of Roman numeration except I denote numbers that are divisible by 5

5. L = 50

X = 10

True

```
10 50 5
 - 50
   0
```

6. II

Chapter
4 Basic Operations

Exercise 4 A

1. Add the following numbers by writing in vertical columns.

a.

	Th	T	H	T	O
		1	1	1	
	2	2	1	6	4
			2	3	5
+		4	6	2	1
	2	7	0	2	0

b.

	L	Th	T	H	T	O
			1		1	
	6	2	1	6	2	9
+	3	3	6	9	2	4
	9	5	8	5	5	3

2. Subtract the following by writing in vertical columns.

a.

	Th	T	H	T	O
		4	10		
	8	5	3	8	6
–	1	2	5	2	3
	7	2	8	6	3

b. ?

3. Find the product.

a.

	TH	T	H	T	O
		1	3	1	
		5	2	6	2
×					5
	2	6	3	1	0

b.

	TH	T	H	T	O
			6	2	1
			6	2	1
×				3	1
			6	2	1
+	1	8	6	3	×
	1	9	2	5	1

4. Find the quotient and the remainder.

a.

```
12 738 61      Quotient
 -72
  18
 -12
   6           Remainder
```

a.

```
88 352840      Quotient
 -352
    8          Remainder
```

Exercise 4 B

1. Fill in the blanks.

a. 3284 **b.** 1 **c.** 320687 **d.** 28393 **e.** 0

f. 7326 **g.** 95684 **h.** 78543 **i.** 0 **j.** 92321

k. 0 **l.** 0

Exercise 4 C

1. Add the following numbers.

a.

	C	TL	L	Th	T	H	T	O
			1	1	1			
	9	2	4	6	5	8	2	3
+		6	3	9	8	5	3	1
	9	8	8	6	4	3	5	4

b.

	C	TL	L	Th	T	H	T	O
			1	1	1	1	1	
	1	3	2	9	5	4	7	8
+		6	5	1	9	8	6	5
	1	9	8	1	5	3	4	3

c.

	TL	L	Th	T	H	T	O
			1	1	1	1	
	5	1	6	5	1	6	5
		4	1	6	5	4	4
+		4	1	4	6	4	4
	5	9	9	6	3	5	3

d.

	C	TL	L	Th	T	H	T	O
			1	1	1	1	1	
		7	7	8	7	9	8	4
		3	2	9	8	2	6	5
+			3	6	8	1	3	7
	1	1	4	5	4	3	8	6

e.

	TC	C	TL	L	Th	T	H	T	O
		1	2	1	1	1	1	1	
	3	4	1	6	9	8	3	2	6
	5	2	9	8	4	2	3	3	8
+			2	6	4	2	3	6	5
	8	7	4	1	8	3	0	2	9

f.

	A	TC	C	TL	L	Th	T	H	T	O
			1	2	1	1	1	1	1	
		2	4	4	9	1	2	6	8	9
		4	3	6	5	4	7	3	2	8
+		5	6	7	7	6	5	4	3	4
	1	2	4	9	2	2	5	4	5	1

2. Make columns and find the sum

a.

	TL	L	Th	T	H	T	O
	1		1			1	
	6	6	7	5	2	1	8
+	1	5	1	7	6	7	3
	8	1	9	2	8	9	1

b.

	C	TL	L	Th	T	H	T	O
	1		1	1	1	1	1	
	2	5	4	5	9	8	4	5
+	6	5	1	9	5	1	6	5
	9	0	6	5	5	0	1	0

b.

	C	TL	L	Th	T	H	T	O
		1	1	1				
	4	5	6	7	9	5	2	3
+		2	8	9	7	4	5	6
	4	8	5	7	6	9	7	9

c.

	TC	C	TL	L	Th	T	H	T	O
		1	1	1	1	1	1		
	7	3	6	5	8	4	6	5	2
+			6	5	9	5	9	5	2
	7	4	3	1	8	0	6	0	4

3. Write the following in numerals, find the sum and write the answer in words.

a. 3, 25, 57, 164

Answer in words.

Three crore twenty nine lakh fifty seven thousand one hundred sixty four.

b. 56, 29, 49, 146

Answer in words.

Fifty six crore twenty nine lakh forty nine thousand one hundred sixty four.

c. 94, 48, 779

Answer in words.

Ninety four lakh forty eight thousand seven hundred seventy nine.

d. 34, 08, 45, 424

Answer in words.

Thirty four crore eight lakh forty five thousand four hundred twenty four.

e. 16, 78, 62, 957

Answer in words.

Sixteen crore seventy eight lakh sixty two thousand nine hundred fifty seven.

f. 10, 00, 00, 049

Answer in words.

Ten crore forty nine.

Exercise 4 D

1. Subtract the following numbers.

a.

	C	TL	L	Th	T	H	T	O
			13	15	17	13	17	
		5	3	5	7	3	1	
	1	6	4	6	8	4	7	9
–		4	6	6	8	5	9	4
	1	1	7	9	9	8	8	5

b.

	C	TL	L	Th	T	H	T	O
					14			
				7				
	7	4	9	8	4	9	4	4
–	5	4	9	1	9	6	1	2
	2	0	0	6	5	3	3	2

c.

	TC	C	TL	L	Th	T	H	T	O
					17	15	10	14	
	2	18	4	9	7	5	0		
	3	8	5	0	8	6	1	4	8
–		9	0	1	8	9	1	6	5
	2	9	4	8	9	6	9	8	3

d.

	TC	C	TL	L	Th	T	H	T	O
				15	10	10			
			3	5	0				
	1	6	4	6	1	0	6	4	9
–			2	8	7	9	0	4	9
	1	6	1	7	3	1	6	0	0

f.

	TC	C	TL	L	Th	T	H	T	O
			13		12	14		10	12
		2	3	9	2		7	0	
	5	3	4	0	3	4	8	1	2
–			5	7	5	6	1	2	6
	5	2	8	2	7	8	6	8	6

f. First we add all minused numbers.

	L	Th	T	H	T	O
	1	1		1	1	
	4	6	5	4	9	8
+		6	5	4	9	8
	5	3	0	9	9	6

Then we minused from subtrahend

	TC	C	TL	L	Th	T	H	T	O
				13	12		12	11	15
			2	3		4	2	1	
	6	5	3	4	2	5	3	2	5
–				5	3	0	9	9	6
	6	5	2	8	9	4	3	2	9

g. First we add all minused number.

	TL	L	Th	T	H	T	O
		1	2	2	1	1	
	1	4	6	5	4	6	5
		1	4	9	8	4	5
+		4	7	9	8	4	9
	2	0	9	5	1	5	9

Then we minused from subtrahend

	TC	C	TL	L	Th	T	H	T	O
					14			13	11
				7			2	3	
	8	4	5	8	4	6	3	4	1
–			2	0	9	5	1	5	9
	8	4	3	7	5	1	1	8	2

2. Make columns and find the difference. Also, verify the result.

a.

	TL	L	Th	T	H	T	O
		17	11	15	16		14
	4	7	1	5	6	9	5
	5	8	2	6	7	0	4
–	3	9	2	7	8	1	5
	1	8	9	8	8	8	9

Verify

	TL	L	Th	T	H	T	O
	1	1	1	1	1	1	
	3	9	2	7	8	1	5
+	1	8	9	8	8	8	9
	5	8	2	6	7	0	4

b.

	TL	L	Th	T	H	T	O
		10	12	13	11		15
	7		2	3	1	9	
	8	1	3	4	2	0	5
–	5	1	4	6	3	0	7
	2	9	8	7	8	9	8

Verify

	TL	L	Th	T	H	T	O
	1	1	1	1	1	1	
	2	9	8	7	8	9	8
+	5	1	4	6	3	0	7
	8	1	3	4	2	0	5

c.

	TL	L	Th	T	H	T	O
			10			12	16
	5	9	0	9	9	2	
	6	0	1	0	0	3	6
–	5	4	1	9	9	4	7
	0	5	9	0	0	8	9

Verify

	TL	L	Th	T	H	T	O
	1	1	1	1	1	1	
		5	9	0	0	8	9
+	5	4	1	9	9	4	7
	6	0	1	0	0	3	6

d.

	C	TL	L	Th	T	H	T	O
			14		12	11		
		5	4		2			
	5	6	3	1	3	1	6	8
–			6	8	4	8	6	6
	5	5	8	2	8	3	0	2

Verify

	C	TL	L	Th	T	H	T	O
		1	1	1	1			
	5	5	8	2	8	3	0	2
+			6	8	4	8	6	6
	5	6	5	1	3	1	6	8

3. Write the following in numerals and find the difference.

a 7, 68, 00, 504 – 5, 87, 05, 784

	C	TL	L	Th	T	H	T	O
		16				14	10	
	6		7	9	9	4		
	7	6	8	0	0	5	0	4
–	5	8	7	0	5	7	8	4
	1	8	0	9	4	7	2	0

b. 88, 99, 000 – 68, 89, 567

	TL	L	Th	T	H	T	O
				18			10
			8	8	9	9	
	8	8	9	9	0	0	0
–	6	8	8	9	5	6	7
	2	0	0	9	4	3	3

c 9, 00, 00, 000 – 5, 77, 86, 099

	C	TL	L	Th	T	H	T	O
								10
	8	9	9	9	9	9	9	
	9	0	0	0	0	0	0	0
–	5	7	7	8	6	0	9	9
	3	2	2	1	3	9	0	1

d. ?

	TL	L	Th	T	H	T	O
				18			10
			8	8	9	9	
	8	8	9	9	0	0	0
–	6	8	8	9	5	6	7
	2	0	0	9	4	3	3

e. 69, 00, 00, 000 – 89, 18, 956

	TC	C	TL	L	Th	T	H	T	O
									10
			9	9	9	9	9	9	
	6	9	0	0	0	0	0	0	0
–			8	9	1	8	9	5	6
	6	9	1	0	8	1	0	4	4

f. ?

	TL	L	Th	T	H	T	O
				18			10
			8	8	9	9	
	8	8	9	9	0	0	0
–	6	8	8	9	5	6	7
	2	0	0	9	4	3	3

g. 4, 69, 00, 002 – 2, 79, 08, 099

	C	TL	L	Th	T	H	T	O
		15	18					12
	3	5	8	9	9	9	9	
	4	6	9	0	0	0	0	2
–	2	7	9	0	8	0	9	9
	1	8	9	9	1	9	0	3

h. 9, 00, 00, 000 – 8, 99, 00, 000

	C	TL	L	Th	T	H	T	O
			10					
	8	9						
	9	0	0	0	0	0	0	0
–	8	9	9	0	0	0	0	0
	0	0	1	0	0	0	0	0

Exercise 4 E

1. Subtract the following and check your answer.

a.

	TL	L	Th	T	H	T	O
		16			14		
	4			4			
	5	6	9	5	4	9	4
–	3	7	6	3	8	2	2
	1	9	3	1	6	7	2

Checking

	TL	L	Th	T	H	T	O
	1			1			
	1	9	3	1	6	7	2
+	3	7	6	3	8	2	2
	5	6	9	5	4	9	4

b.

	TL	L	Th	T	H	T	O
							10
	6	9	9	9	9	9	
	7	0	0	0	0	0	0
–	4	9`	2	8	3	7	6
	2	0	7	1	6	2	4

Checking

	TL	L	Th	T	H	T	O
	1	1	1	1	1	1	
	2	0	7	1	6	2	4
+	4	9	2	8	3	7	6
	7	0	0	0	0	0	0

c.

	C	TL	L	Th	T	H	T	O
		15	14					15
	7	5					3	
	8	6	4	9	2	8	4	5
–	6	9	5	4	0	8	3	9
	1	6	9	5	2	0	0	6

Checking

	C	TL	L	Th	T	H	T	O
	1	1					1	
	1	6	9	5	2	0	0	6
+	6	9	5	4	0	8	3	9
	8	6	4	9	2	8	4	5

d.

	C	TL	L	Th	T	H	T	O
								10
		9	9	9	9	9	9	
	1	0	0	0	0	0	0	0
–		5	9	9	1	4	5	9
		4	0	0	8	5	4	1

Checking

	C	TL	L	Th	T	H	T	O
		1	1	1	1	1	1	
		4	0	0	8	5	4	1
+		5	9	9	1	4	5	9
	1	0	0	0	0	0	0	0

e.

	C	TL	L	Th	T	H	T	O
			13			18	14	13
		8			5	8	4	
	6	9	3	8	6	9	5	3
–	4	3	9	5	4	9	8	7
	2	5	4	3	1	9	6	6

Checking

	C	TL	L	Th	T	H	T	O
		1			1	1	1	
	2	5	4	3	1	6	6	6
+	4	3	9	5	4	9	8	7
	6	9	3	8	6	9	5	3

f.

	TL	L	Th	T	H	T	O
		15		14			
	8		8				
	9	5	9	4	9	5	9
–		6	4	9	2	4	8
	8	9	4	5	7	1	1

Checking

	TL	L	Th	T	H	T	O
	1		1				
	8	9	4	5	7	1	1
+		6	4	9	2	4	8
	9	5	9	4	9	5	9

g.

	C	TL	L	Th	T	H	T	O
		14		12		13	11	14
	7		8		5	3	1	
	8	4	9	2	6	4	2	4
–	2	7	6	8	5	4	3	8
	5	7	2	4	0	9	8	6

Checking

	C	TL	L	Th	T	H	T	O
	1		1		1	1	1	
	5	7	2	4	0	9	8	6
+	2	7	6	8	5	4	3	8
	8	4	9	2	6	4	2	4

h.

	TL	L	Th	T	H	T	O
				17		13	12
			8		8	3	
	8	9	9	7	9	4	2
–		7	8	9	6	4	6
	8	2	0	8	2	9	6

Checking

	TL	L	Th	T	H	T	O
			1		1	1	
	8	2	0	8	2	9	6
+		7	8	9	6	4	6
	8	9	9	7	9	4	2

i.

	C	TL	L	Th	T	H	T	O
	3	2	8	9	2	5	0	4
–		2	8	9	2	5	0	4
	3	0	0	0	0	0	0	0

Checking

	C	TL	L	Th	T	H	T	O
	3	0	0	0	0	0	0	0
+		2	8	9	2	5	0	4
	3	2	8	9	2	5	0	4

j.

	TC	C	TL	L	Th	T	H	T	O
			12		17			12	12
		8		7			8	2	
	9	9	2	8	7	7	9	3	2
–	8	1	3	2	8	5	6	3	3
	1	7	9	5	9	2	2	9	9

Checking

	TC	C	TL	L	Th	T	H	T	O
		1		1			1	1	
	1	7	9	5	9	2	2	9	9
+	8	1	3	2	8	5	6	3	3
	9	9	2	8	7	7	9	3	2

Exercise 4 F

1. Find the product of the following:

a.

	C	TL	L	Th	T	H	T	O
			4	3	2	1	5	8
×							4	9
		3	8	8	9	4	2	2
+	1	7	2	8	6	3	2	0
	2	1	1	7	5	7	4	2

b.

	C	TL	L	Th	T	H	T	O
			8	0	1	5	8	2
×							8	7
		5	6	1	1	0	7	4
+	6	4	1	2	6	5	6	0
	6	9	7	3	7	6	3	4

c.

	C	TL	L	Th	T	H	T	O
			3	1	5	9	9	7
×							6	3
			9	4	7	9	9	1
+	1	8	9	5	9	8	2	0
	1	9	9	0	7	8	1	1

2. Find the product of the following:

a.

	TC	C	TL	L	Th	T	H	T	O
			4	2	3	4	5	6	2
×								6	4
		1	6	9	3	8	2	4	8
+	2	5	4	0	7	3	7	2	0
	2	7	1	0	1	1	9	6	8

b.

	C	TL	L	Th	T	H	T	O
			3	0	0	5	9	2
×							7	9
		2	7	0	5	3	2	8
+	2	1	0	4	1	4	4	0
	2	3	7	4	6	7	6	8

c.

	TC	C	TL	L	Th	T	H	T	O
			4	4	3	2	1	0	6
×								5	2
			8	8	6	4	2	1	2
+	2	2	1	6	0	5	3	0	0
	2	3	0	4	6	9	5	1	2

d.

	TC	C	TL	L	Th	T	H	T	O
		2	3	0	9	2	8	7	3
×								3	2
		4	6	1	8	5	7	4	6
+	6	9	2	7	8	6	1	9	0
	7	3	8	9	7	1	9	3	6

e.

	TC	C	TL	L	Th	T	H	T	O
		4	0	2	3	9	2	5	7
×								5	2
	2	4	1	4	3	5	5	4	2
+	4	0	2	3	9	2	5	7	0
	6	4	3	8	2	8	1	1	2

f.

	TC	C	TL	L	Th	T	H	T	O
			2	9	5	4	5	6	3
×								7	3
			8	8	6	3	6	8	9
+	2	0	6	8	1	9	4	1	0
	2	1	5	6	8	3	0	9	9

g.

	A	TC	C	TL	L	Th	T	H	T	O
			9	4	3	8	5	6	7	8
×									9	5
		4	7	1	9	2	8	3	9	0
+	8	4	9	4	7	1	1	0	2	0
	8	9	6	6	6	3	9	4	1	0

h.

			TC	C	TL	L	Th	T	H	T	O
			2	8	3	4	3	0	6	0	7
×										5	9
		2	5	5	0	8	7	5	4	6	3
+	1	4	1	7	1	5	3	0	3	5	0
	1	6	7	0	0	4	0	5	8	1	3

Exercise 4 G

1. Multiply the following:

a.

	C	TL	L	Th	T	H	T	O
				2	6	5	9	2
×						7	4	1
				2	6	5	9	2
		1	0	6	3	6	8	0
+	1	8	6	1	4	4	0	0
	1	9	7	0	4	6	7	2

b.

	C	TL	L	Th	T	H	T	O
				3	2	9	2	8
×						3	7	6
			1	9	7	5	6	8
		2	3	0	4	9	6	0
+		9	8	7	8	4	0	0
	1	2	3	8	0	9	2	8

c.

	C	TL	L	Th	T	H	T	O
				9	2	0	5	3
×						4	8	5
			4	6	0	2	6	5
		7	3	6	4	2	4	0
+	3	6	8	2	1	2	0	0
	4	4	6	4	5	7	0	5

2. Find the product of the following:

a.

	C	TL	L	Th	T	H	T	O
				7	2	0	8	5
×						8	0	5
			3	6	0	4	1	0
			0	0	0	0	0	0
+	5	7	6	6	5	6	0	0
	5	8	0	2	6	0	1	0

b.

	C	TL	L	Th	T	H	T	O
				3	6	5	4	4
×						5	3	6
			2	1	9	9	2	4
		1	0	9	9	6	2	0
+	1	8	3	2	7	0	0	0
	1	9	6	4	6	5	4	4

c.

	C	TL	L	Th	T	H	T	O
				6	7	5	0	9
×						2	4	9
			6	0	7	5	8	1
		2	7	0	0	3	6	0
+	1	3	5	0	1	8	0	0
	1	6	8	0	9	7	4	1

d.

	C	TL	L	Th	T	H	T	O
				1	9	8	7	6
×						8	2	4
				7	9	5	0	4
			3	9	7	5	2	0
+	1	5	9	0	0	8	0	0
	1	6	3	7	7	8	2	4

e.

	C	TL	L	Th	T	H	T	O
				3	0	9	9	4
×						8	8	8
			2	4	7	9	5	2
		2	4	7	9	5	2	0
+	2	4	7	9	5	2	0	0
	2	7	5	2	2	6	7	2

f.

	C	TL	L	Th	T	H	T	O
				8	3	0	5	7
×						1	8	8
			6	6	4	4	5	6
		6	6	4	4	5	6	0
+		8	3	0	5	7	0	0
	1	5	6	1	4	7	1	6

g.

	TL	L	Th	T	H	T	O
			2	3	5	6	4
×					3	3	2
			4	7	1	2	8
		7	0	6	9	2	0
+	7	0	6	9	2	0	0
	7	8	2	3	2	4	8

h.

	C	TL	L	Th	T	H	T	O
				5	2	9	4	5
×						6	8	2
			1	0	5	8	9	0
		4	2	3	5	6	0	0
+	3	1	7	6	7	0	0	0
	3	6	1	0	8	4	9	0

i.

	C	TL	L	Th	T	H	T	O
				7	8	7	6	5
×						4	3	2
			1	5	7	5	3	0
		2	3	6	2	9	5	0
+	3	1	5	0	6	0	0	0
	3	4	0	2	6	4	8	0

j.

	C	TL	L	Th	T	H	T	O
				8	3	5	6	7
×						2	4	6
			5	0	1	4	0	2
		3	3	4	2	6	8	0
+	1	6	7	1	3	4	0	0
	2	0	5	5	7	4	8	2

k.

	C	TL	L	Th	T	H	T	O
				6	2	9	4	9
×						3	8	7
			4	4	0	6	4	3
		5	0	3	5	9	2	0
+	1	8	8	8	4	7	0	0
	2	4	3	6	1	2	6	3

l.

	C	TL	L	Th	T	H	T	O
				6	8	2	6	5
×						4	3	3
			2	0	4	7	9	5
		2	0	4	7	9	5	0
+	2	7	3	0	6	0	0	0
	2	9	5	5	8	7	4	5

Exercise 4 H

1. Multiply the following numbers.

a.

	TC	C	TL	L	Th	T	H	T	O
					4	8	5	4	2
×						3	2	2	5
				2	4	2	4	1	0
				9	7	0	8	4	0
			9	7	0	8	4	0	0
+	1	4	5	6	2	6	0	0	0
	1	5	6	5	4	7	9	5	0

b.

	TC	C	TL	L	Th	T	H	T	O
					6	3	1	5	9
×						2	3	1	9
				5	6	8	4	3	1
				6	3	1	5	9	0
		1	8	9	4	7	7	0	0
+	1	2	6	3	1	8	0	0	0
	1	4	6	4	6	5	7	2	1

2. Find the product of the following:

a.

	TC	C	TL	L	Th	T	H	T	O
					2	5	9	2	1
×						6	7	5	4
				1	0	3	6	8	4
			1	2	9	6	0	5	0
		1	8	1	4	4	7	0	0
+	1	5	5	5	2	6	0	0	0
	1	7	5	0	7	0	4	3	4

b.

	TC	C	TL	L	Th	T	H	T	O
					8	0	1	2	9
×						1	9	8	5
				4	0	0	6	4	5
			6	4	1	0	3	2	0
		7	2	1	1	6	1	0	0
+		8	0	1	2	9	0	0	0
	1	5	9	0	5	6	0	6	5

c.

	TC	C	TL	L	Th	T	H	T	O
					6	4	3	2	6
×						1	7	3	5
				3	2	1	6	3	0
			1	9	2	9	7	8	0
		4	5	0	2	8	2	0	0
+		6	4	3	2	6	0	0	0
	1	1	1	6	0	5	6	1	0

d.

	TC	C	TL	L	Th	T	H	T	O
					6	4	8	3	4
×						3	2	0	1
					6	4	8	3	4
					0	0	0	0	0
			1	2	6	6	8	0	0
+	1	9	4	5	0	2	0	0	0
	2	0	7	5	3	3	6	3	4

e.

	TC	C	TL	L	Th	T	H	T	O
					4	3	2	1	5
×						2	7	5	3
				1	2	9	6	4	5
			2	1	6	0	7	5	0
		3	0	2	5	0	5	0	0
+		8	6	4	3	0	0	0	0
	1	1	8	9	7	0	8	9	5

f.

	TC	C	TL	L	Th	T	H	T	O
					2	8	7	6	8
×						9	9	9	9
				2	5	8	9	1	2
			2	5	8	9	1	2	0
		2	5	8	9	1	2	0	0
+	2	5	8	9	1	2	0	0	0
	2	8	7	6	5	1	2	3	2

g.

	C	TL	L	Th	T	H	T	O
				7	5	4	4	2
×					1	0	3	2
			1	5	0	8	8	4
		2	2	6	3	2	6	0
		0	0	0	0	0	0	0
+	7	5	4	4	2	0	0	0
	7	7	8	5	6	1	4	4

h.

	TC	C	TL	L	Th	T	H	T	O
					8	8	8	8	8
×						3	3	3	3
				2	6	6	6	6	4
			2	6	6	6	6	4	0
		2	6	6	6	6	4	0	0
+	2	6	6	6	6	4	0	0	0
	2	9	6	2	6	3	7	0	4

i.

	TC	C	TL	L	Th	T	H	T	O
					9	9	9	9	9
×						6	6	6	6
				5	9	9	9	9	4
			5	9	9	9	9	4	0
		5	9	9	9	9	4	0	0
+	5	9	9	9	9	4	0	0	0
	6	6	6	5	9	3	3	3	4

j.

	C	TL	L	Th	T	H	T	O
				6	5	4	4	2
×					1	0	3	4
			2	6	1	7	6	8
		1	9	6	3	2	6	0
		0	0	0	0	0	0	0
+	6	5	4	4	2	0	0	0
	6	7	6	6	7	0	2	8

Exercise 4 I

1. Solve the following.

a. **3288 × 10 = 32880** **b.** **70805 × 1000 = 70805000**

c. 7288 × 1000 = 7288000 d. 52852 × 100 = 5285200

e. 82895 × 30 = 248650

2. Find the product of the following.

a. 4285 × 300 = 1285500 b. 3334 × 7000 = 23338000

c. 2389 × 9000 = 21501000 d. 6285 × 5000 = 31425000

e. 8292 × 800 = 6633600 f. 5924 × 400 = 2369600

g. 4281 × 20 = 85620 h. 9787 × 600 = 5872200

3. Fill in the blanks.

a. 3284 × 1 = 3284 b. 2104 × 0 = 0

c. $4185 \times 3104 = 3104 \times 4185$ d. $7000 \times 1000 = 7000000$

e. $6000 \times 200 = 1200000$

Exercise 4 J

1. Divide the following numbers.

a.
$$\begin{array}{r} 192\overline{)320054}(1666 \\ -192 \\ \hline 1280 \\ -1152 \\ \hline 1285 \\ -1152 \\ \hline 1334 \\ -1152 \\ \hline 182 \end{array}$$

b.
$$\begin{array}{r} 216\overline{)928344}(4297 \\ -864 \\ \hline 643 \\ -432 \\ \hline 2114 \\ -1944 \\ \hline 1704 \\ -1519 \\ \hline 192 \end{array}$$

c.
$$\begin{array}{r} 351\overline{)935001}(2663 \\ -702 \\ \hline 2330 \\ -2106 \\ \hline 2140 \\ -2106 \\ \hline 1341 \\ -1053 \\ \hline 288 \end{array}$$

2. Find the quotient and the remainder and verify your answer:

a.
$$\begin{array}{r} 895\overline{)85010101}(1666 \\ -8055 \\ \hline 4460 \\ -3580 \\ \hline 8801 \\ -8055 \\ \hline 7460 \\ -7160 \\ \hline 3001 \\ -2685 \\ \hline 316 \end{array}$$

Quotient = 94983

Remainder = 316

Verify:

$895 \times 94983 + 316$

$= 85010101$

b.
$$\begin{array}{r} 779\overline{)30150050}(4297 \\ -2337 \\ \hline 6780 \\ -6232 \\ \hline 5480 \\ -5453 \\ \hline 2750 \\ -2337 \\ \hline 413 \end{array}$$

Quotient = 38703

Remainder = 413

Verify:

$779 \times 307003 + 413$

$= 30150050$

c.

```
659)63304289(96061
   -5931
    3994
   -3954
      4028
   -  3954
       749
   -   659
        90
```

Quotient = 96061

Remainder = 90

Verify:

659 × 96061 + 90

= 63304289

d.

```
1255)99549954(79322
   -8785
    11699
   -11295
      4049
   -  3765
       2845
   -   2510
        3354
   -    2510
         844
```

Quotient = 79322

Remainder = 844

Verify:

1255 × 79322 + 844

= 99549954

e.

```
4525)82015498(18124
   -4525
    36765
   - 36200
      5654
   -  4525
       11299
   -   9050
        22498
   -    18100
         4398
```

Quotient = 18124

Remainder = 4398

Verify:

4525 × 18124 + 4398

= 82015498

f.

```
7520)7680547(1021
   -7520
    16054
   - 15040
      10147
   -  7520
       2627
```

Quotient = 1021

Remainder = 2627

Verify:

7520 × 1021 + 2627

7680547

g.

```
5001)83207095(16638
   -5001
    33197
   - 30006
     31910
   -  30006
      19049
   -   15003
       40462
       40008
         454
```

Quotient = 16638

Remainder = 457

Verify:

5001 × 16638 + 457

= 83207095

h.

```
7788)90305090(11595
   -7788
    12425
   - 7788
     46370
   - 38940
      74309
   -  70092
       42170
   -   38940
        3230
```

Quotient = 11595

Remainder = 3230

Verify:

7788 × 11595 + 3230

= 90305090

i.

```
9017)8395499(931
   -81153
    28019
   - 27051
     9689
   -  9017
      672
```

Quotient = 16638

Remainder = 457

Verify:

5001 × 16638 + 457

= 83207095

3. Find the dividend if:

a. Dividend = Divisor × Quotient + Remainder.

= 385 × 3925 + 697

= 1511125 + 697 = 1511822

b. Dividend = Divisor × Quotient + Remainder.

= 998 × 5409 + 549

= 5398182 + 549 = 5398731

c. Dividend = Divisor × Quotient + Remainder
= 705 × 9304 + 495
= 6594570 + 495 = 6595065

d. Dividend = Divisor × Quotient + Remainder
= 886 × 7089 + 999
= 6280854 + 999 = 6281853

Exercise 4 K

1. Divide and find the quotient (Q) and the remainder (R).

a. Q = 73 R = 0 **b.** Q = 2800 R = 0
c. Q = 87 R = 0 **d.** Q = 19000 R = 0
e. Q = 5 R = 0 **f.** Q = 430000 R = 0
g. Q = 3006 R = 0 **h.** Q = 140 R = 0

2. Fill in the blanks by writing the missing numbers.

a. 70000 ÷ 10 = 7000 b. 4523600 ÷ 10 = 452360
c. 8040 ÷ 10 = 804 d. 8310000 ÷ 100 = 83100
e. 1000000 ÷ 1000 = 1000 f. 530000 ÷ 1000 = 530

Exercise 4 L

1. Solve the following.

a. 15 + 24 ÷ 3 - 2 × 3
= 15 + 8 – 2 × 3
= 15 + 8 – 6
= 23 – 6 = 17

b. 14 × 2 + 4 – 20 ÷ 2
= 14 × 2 + 4– 10
= 28 + 4 – 10
= 32 – 10 = 22

c. 100 × 2 + 96 ÷ 2 – 102
= 100 × 2 + 48 – 102
= 200 + 48 – 102
= 248 – 102 = 146

d. 40 + 2 – 3 × 22 ÷ 2
= 40 + 2 – 3 × 11
= 40 + 2 – 33
= 42 – 33 = 9

e. 118 + 12 – 3 × 100 ÷ 10
= 118 + 12 – 3 × 10
= 118 + 12 – 30
= 130 – 30 = 100

f. 44 + 4 + 12– 2 × 2
= 44 + 4 + 12 – 4
= 60 – 4 = 56

g. 75 ÷ 3 – 20 + 2 × 2
= 25 – 20 + 2 × 2
= 25 – 20 + 4
= 29 – 20 = 9

h. 3 × 3 – 3 ÷ 3 + 3
= 3 × 3 – 1 + 3
= 9 – 1 + 3
= 12 – 1 = 11

i. $62 + 2 + 4 \times 121 \div 11$
$= 62 + 2 + 4 \times 11$
$= 62 + 2 + 44$
$= 64 + 44 = 108$

j. $80 + 10 \div 10 \times 2 - 61$
$= 80 + 1 \times 2 - 61$
$= 80 + 2 - 61$
$= 82 - 61 = 21$

k. $8 + 12 - 6 \times 2$
$= 8 + 12 - 12$
$= 20 - 12 = 8$

l. $4 \times 5 + 30 \div 5$
$= 4 \times 5 + 6$
$= 20 + 6 = 26$

m. $3 + 40 \div 10 - 3$
$= 3 + 4 - 3$
$= 7 - 3 = 4$

n. $14 + 7 \times 2 - 16 \div 2$
$= 14 + 7 \times 2 - 8$
$= 14 + 14 - 8$
$= 28 - 8 = 20$

o. $2 + 4 \times 6 - 2 \times 6$
$= 2 + 24 - 12$
$= 26 - 12 = 14$

p. $20 \times 5 - 100 \div 100$
$= 20 \times 5 - 1$
$= 100 - 1 = 99$

q. $8 + 20 \div 5 - 10 \div 2$
$= 8 + 4 - 5$
$= 12 - 5 = 7$

r. $75 \times 0 - 0 \div 75$
$= 75 \times 0 - 0$
$= 0 - 0 = 0$

s. $39 - 0 + 5 \times 999$
$= 39 - 0 + 4995$
$= 5034 - 0 = 5034$

t. $7 + 19 - 11 + 13$
$= 26 - 24 = 2$

u. $3 \times 2 + 8 - 5$
$= 6 + 8 - 5$
$= 14 - 5 = 9$

v. $25 \div 5 \times 8 + 6 - 12$
$= 5 \times 8 + 6 - 12$
$= 40 + 6 - 12$
$= 46 - 12 = 34$

w. $18 + 4 \times 6 \div 2 - 9$
$= 18 + 4 \times 3 - 9$
$= 18 + 12 - 9$
$= 20 - 9 = 11$

x. $27 - 9 + 4 \times 5$
$= 27 - 9 + 20$
$= 47 - 9 = 38$

y. $14 + 28 \div 7 \times 3 - 17$
$= 14 + 4 \times 3 - 17$
$= 14 + 12 - 17$
$= 26 - 17 = 9$

z. $17 \times 3 + 81 \div 9 - 60$
$= 17 \times 3 + 9 - 60$
$= 51 + 9 - 60$
$= 60 - 60 = 0$

Word Problems

Addition and Subtraction

1. Using the proper statements solve the following word problems

a. Number of men in a district = 575967

Number of children in a district = 685493

Number of women in district = 495737

Total population of district =

	TL	L	Th	T	H	T	O
			7	5	4	4	2
		5	7	5	9	6	7
		6	8	5	4	9	3
+		4	9	5	7	3	7
	1	7	5	7	1	9	7

b. The amount that Raman takes from bank = 98, 57, 850

The amount that he in rest from his pocket = 6, 08, 549

The cost of his house is

98, 57, 850 + 6, 08, 549

= 10, 4, 66, 399 rupees

c. 4508395 + 22456789 + 7395491

= 3, 43, 60, 675

The crore forty three lakh sixty thousand six hundred seventy five.

d. A bank gave personal loan for first year = 24, 92, 85, 283

Bank gave personal loan for second year = 38, 54, 32, 448

Bank gave personal loan for third year = 26, 75, 74, 620

Total amount = 249285283 + 385432448 + 267574620

= 90, 22, 92, 351

e. Number of boys passed in examination = 6285459

Number of girls passed in examination = 7862864

Total number of passed students = 6285459 + 7862864

= 14148359

f. Number of biscuits manufactured in 2014 = 4754809

Number of biscuits manufactured in 2015 = 3204689

Number of biscuits manufactured in 2016 = 75819362

Total number of manufactured biscuits

= 4754809 + 3204689 + 75819362 = 83778860

Multiplication and Division

Using the proper statements solve the following word problems

1. The cost of one laptop = 49, 565

The cost of 175 such laptop = 49565 × 175

Total cost of laptop = 8673875

	TL	L	Th	T	H	T	O
			4	9	5	6	5
×					1	7	5
		2	4	7	8	2	5
	3	4	6	9	5	5	
+	4	9	5	6	5		
	8	6	7	3	8	7	5

2. Smallest 6 digit number = 100000

Greatest 4 digit number = 9999

Product of 100000 × 9999 = 999900000

	TC	C	TL	L	Th	T	H	T	O
				1	0	0	0	0	0
×						9	9	9	9
				9	0	0	0	0	0
			9	0	0	0	0	0	
+		9	0	0	0	0	0		
	9	9	9	9	0	0	0	0	0

3.

	TC	C	TL	L	Th	T	H	T	O
				3	7	4	3	0	5
×							4	0	9
			3	3	6	8	7	4	5
			0	0	0	0	0	0	
+		1	4	9	7	2	2	0	
	1	5	3	0	9	0	7	4	5

4. The factory makes pen in a days = 54968

Total number of days = 40

Total number of pen make in days = 2198720

	TL	L	Th	T	H	T	O
			5	4	9	6	8
×						4	0
			0	0	0	0	0
+		2	1	9	8	7	2
	2	1	9	8	7	2	0

	TL	L	Th	T	H	T	O
				3	1	0	5
×					3	6	5
			1	5	5	2	5
		1	8	6	3	0	
+		9	3	1	5		
	1	1	3	3	3	2	5

5. Milk sold by the milk booth in a day = 3105 liters

Milk will sold by the milk booth in a year = 365

Total milk will sold by the milk booth in 3 year = 33999 liters

6. Greatest number of 5 digit
= 99999
Greatest number of 3 digit
= 999
Product
= 99899001

	C	TL	L	Th	T	H	T	O
				9	9	9	9	9
×						9	9	9
			8	9	9	9	9	1
		8	9	9	9	9	1	
+	8	9	9	9	9	1		
	9	9	8	9	9	0	0	1

7. The cost of 130 refrigerators = 41, 94, 975
Cost of one refrigerator = 130
= ` $32269\frac{5}{130}$

```
130)4194975(32269
  -390
   294
  - 260
    897
  -  780
    1175
  -  1170
       5
```

8. Number of toys in a cartons = 256
Number of cartons required to pack = 8, 21, 760

Therefore, 3210 cartons are required to pack 821760 toys.

```
256)821760(3210
  -768
   537
  - 512
    256
  - 256
      0
```

9. Capacity of the stadium = 73125
Number of the people can sit in arow = 975
Total number of seats =

Therefore, 75 rows of seats are there in the stadium.

```
975)73125(75
  -6825
   4875
  - 4875
      0
```

10 Total cost of air ticket of 45 people = 8, 25, 510

The cost of air ticket for 1 person =

$$
\begin{array}{r|l}
45 & 825510 \\
-45 & \\
\hline
375 & \\
-360 & \\
\hline
155 & \\
-135 & \\
\hline
201 & \\
-180 & \\
\hline
30 &
\end{array}
\quad 18344
$$

11. The price of 318 copies = 45, 640

The price of one copy =

$\therefore$ price of one copy = ` $143\frac{166}{318}$

$$
\begin{array}{r|l}
318 & 45640 \\
-318 & \\
\hline
1384 & \\
-1272 & \\
\hline
1120 & \\
-954 & \\
\hline
166 &
\end{array}
\quad 143
$$

12.

$$
\begin{array}{r|l}
897 & 7897188 \\
-318 & \\
\hline
1384 & \\
-1272 & \\
\hline
1120 & \\
-954 & \\
\hline
166 &
\end{array}
\quad 143
$$

To get 7897188 we must be multiplied to 8804.

HOTS

1. The difference between two numbers = 9254731

Smaller number = 4136851

Bigger number = 9254731 + 4136851

= 13391582

2. The smallest 4 digit number formed by the digit 3, 9, 2, 5 = 2359

The to the greatest number of 5 digit = 99999

99999
× 2359
899991
499995×
299997
199998
235897641

3.

92885
×77
650195
65019.5
71521458

The product of 92885827 = U52145

The greatest number formed by 3, 6, 8, 5, 10, 9, 2

= 98765310

according to question

98765310
–152145
98613165

4. The smallest 4 digit number = 1000

The smallest 5 digit number = 10000

1000 × 10000 = 10000000

The product of 4 digit smallest number and s digit smallest number is one crore.

5. (a) 3954 × 16 × 93
= 63264 × 93
= 5883552

(b) 54395 × 448 × 66
= 2393380 × 66
= 157963080

(c) 83159 × 34 × 83
= 2827406 × 88
= 234674698

(d) 79254 × 57 × 9
= 4517478 × 91
= 411090490

6.

```
      18888
532 ) 1004416 (
    - 532
      ----
      4724
    - 4256
      ----
        4256
    -   4256
      ------
            0
      ------
```

The 532nd part of 1004416 is 1888.

7. The product of two number Q = 497448

The first number = 882

Second number will be = 497448 ÷ 882

```
      564
882 ) 497448 (
    - 4410
      ----
      5644
    - 5292
      ----
        3528
    -   3528
      ------
            0
      ------
```

Therefore, the second number is 564.

8. The greatest 9 digit number = 999999999

The smallest 9 digit number = 100000000

```
  999999999
+ 100000000
------------
 1099999999
------------
```

There are 10 digit in the sum of 9 digit greatest number and 9 digit smallest number.

9. Put in the correct sign and/or brackets to make the following expressions true.

(a) 4 + 4 + 3 = 16 (b) 10 × 3 + 5 = 35

(c) 24 ÷ 2 – 4 = 8 (d) 7 – 6 + 11 = 12

(e) 8 ÷ 2 + 10 = 14 (f) 50 ÷ 25 × 4 = 8

Mental Maths

1. To get 10000000 we should have odd

$$\begin{array}{r} 10000000 \\ -\ 4059351 \\ \hline 5940619 \end{array}$$

We should have add 5940619 to get 10000000

2. The smallest 8 digit number = 10000000

The smallest 7 digit number = 10,00,000

Difference

$$\begin{array}{r} 10000000 \\ -\ 1000000 \\ \hline 900000 \end{array}$$

3.

$$\begin{array}{r} 5015 \\ +\ 250 \\ \hline 5265 \end{array}$$

Adding 5015 and 250 and dividing sum by 9 gives 585.

$$\begin{array}{r} 585 \\ 9\overline{)\,5265\,(} \\ -45 \\ \hline 46 \\ -\ 72 \\ \hline 45 \\ -\ 45 \\ \hline 0 \end{array}$$

4.

$$\begin{array}{r} 222222 \\ 99999999 \\ 9999999 \\ +\ 999999 \\ \hline 110999997 \end{array}$$

5. The number which is subtracted is called <u>subtrahend</u>.

6. The number that remains after the division is called the <u>remainder</u>.

7. Minuend <u>subtrahend</u> difference.

8. 405632000 + <u>0</u> = 405632000

9. 330,30,000 – <u>1</u> = 3,3029999

10. 99999999 + 10000000 = <u>10000000</u> + 99999999

Chapter
5

XXXXX

Exercise 5 A

1. **a.** $6 \times 4 = 24$, $6 \times 5 = 30$, $6 \times 6 = 36$, $6 \times 7 = 42$

b. $8 \times 4 = 32$, $8 \times 5 = 40$; $8 \times 6 = 48$, $8 \times 7 = 56$

c. $10 \times 4 = 40$, $10 \times 5 = 50$, $10 \times 6 = 60$; $10 \times 7 = 70$

d. $16 \times 4 = 64$, $16 \times 5 = 80$; $16 \times 6 = 96$; $16 \times 7 = 112$

e. $13 \times 4 = 52$, $13 \times 5 = 65$; $13 \times 6 = 78$, $13 \times 7 = 91$

2. **a.** 6th multiple of 5 is 30

b. 8th multiple of 3 is 24

c. 9th multiple of 8 is 72

d. 8th multiple of 2 is 16

e. 3rd multiple of 12 is 36

f. 4th multiple of 5 is 20

3. **a.** $6 \times 2 = 12$, $6 \times 3 = 18$, $6 \times 4 = 24$, $6 \times 5 = 30$

b. $7 \times 2 = 14$, $7 \times 3 = 21$, $7 \times 4 = 28$, $7 \times 5 = 35$

c. $18 \times 2 = 36$, $18 \times 3 = 54$, $18 \times 4 = 72$, $18 \times 5 = 90$

d. $12 \times 2 = 24$, $12 \times 3 = 36$, $12 \times 4 = 48$, $12 \times 5 = 60$

e. $20 \times 2 = 40$, $20 \times 3 = 60$, $20 \times 4 = 80$, $20 \times 5 = 100$

f. $19 \times 2 = 38$, $19 \times 3 = 57$, $19 \times 4 = 76$, $19 \times 5 = 95$

4. Multiplies of 14 lying between 84 to 150 is

$14 \times 6 = 84$, $14 \times 7 = 98$, $14 \times 8 = 112$, $14 \times 9 = 126$, $14 \times 10 = 140$

5. Multiples of 6 between 20 and 40 is

$6 \times 4 = 24$, $6 \times 5 = 30$, $6 \times 6 = 36$

6. $7 \times 1 = 7$, $7 \times 2 = 14$, $7 \times 3 = 21$, $7 \times 4 = 28$, $7 \times 5 = 35$

7. 13 (11) 21 (55) 97 (88) (66) 10

11, 55, 88, 66 are multiples of 11

8. (32) (16) 19 (40) 46 (56) (88) (80)

32, 16, 40, 56, 88, 80 are multiples of 8.

9. Fill in the blanks.

a. $3 \times 6 = 18$ — 18 is a multiple of 3 and 6.

b. $7 \times 8 = 56$ — is a multiple of 7 and 8.

c. $9 \times 15 = 135$ — 135 is a multiple of 9 and 15.

d. $21 \times 6 = 126$ — 126 is a multiple of 21 and 6.

e. $3 \times 5 \times 7 = 105$ 105 is a multiple __3, 5__ and __7__.

f. $11 \times 8 \times 2 = 176$ 176 is a multiple of __11, 8__ and __2__.

10.

a. $24 \times 1 = 24$, yes **b.** $61 \times 2 = 61$, yes

c. $4 \times 5 \times 3 = 60$, no **d.** $61 \times 2 = 61$; yes

11. If we divided 95, 144 by 4 we get 0 remainder = 50, 95, 144 is multiplies of 4.

12. 5×12 180 means __180__ is a multiple of __5__ and __12__.

13.

a. mutipies of 4 : 4 8, 12, 16, 20, 24, 28, 32, 36
multiples of 6 : 6, 12, 18, 24, 30, 36, 42
common multiples : 12, 24, 36.

b. multiplesof6: 6, 12, 18, 24, 30, 36, 42, 48, 54, 60, 66, 72
multiples of 8: 8, 16, 24, 32, 40, 48, 56, 64, 72
multiples of 12: 12, 24, 36, 48, 60, 72
common multiples: 24, 48, 72

Exercise 5 B

1. **a.** No, $6 \div 5 = 7$ and remainder 1.

b. Yes, $77 \div 7 = 11$ and remainder on 0.

c. No, $62 \div 8 = 7$ and remainder 6.

d. No, $70 \div 9 = 7$ and remainder 7.

e. Yes, $120 \div 12 = 10$ and remainder 0.

2. Fill in the blanks.

a. $2 \times 7 = 14$: 2 and __7__ are the factors of 14.

b. $3 \times 8 = 24$: __3__ and 8 are the factors of 24.

c. $5 \times 7 = 35$: 5 and 7 are the factors of __35__

d. $4 \times 5 = 20$ 4 and 5 are the factor of 20.

e. $7 \times 8 = 56$: 7 and __8__ are the factor of 56.

3. **a.** Factor of 12: 1×12, 2×6, 3×4, 4×3, 6×2, 12×1
Therefore, 1, 2, 3, 4 and 6, 12 are the factor of 12

b. Factor of 28: 1×28, 2×14, 4×7, 7×4, 14×2, 28×1
Therefore, 1, 2, 4, 7, 14 and 28 are the factor of 28

c. Factor of 45 : 1×45, 3×15, 5×9, 9×5, 15×3, 45×1
Therefore, 1, 3, 5, 9, 15 and 45 are the factor of 45.

d. Factor of 50: $1 \times 50, 2 \times 25, 5 \times 10, 10 \times 5, 25 \times 1, 50 \times 1$

1, 2, 5, 10, 25 and 50 are the factor of 50.

e. Factor 96: $1 \times 96, 2 \times 48, 3 \times 22; 4 \times 24, 6 \times 16, 8 \times 12, 12 \times 8,$ $16 \times 6, 24 \times 4, 32 \times 3, 48 \times 2, 96 \times 1$

Therefore: 1, 2, 3, 4, 6, 8, 12, 16, 24, 32, 48 and 96 are the factor of 96.

f. Factor of 88: $1 \times 88, 2 \times 44, 4 \times 22, 8 \times 11, 11 \times 8, 22 \times 4,$ $44 \times 2, 88 \times 1$

Therefore, 1, 2, 4, 8, 11, 22, 44 and 88 are the factor of 88.

g. Factor of 32: $3 \times 32, 2 \times 16, 4 \times 8, 8 \times 4, 16 \times 2, 32 \times 1$

Therefore, 1, 2, 4, 8, 16 and 32 are the factor of 32.

h. Factor of 35: $1 \times 35, 5 \times 7, 7 \times 5, 35 \times 1$

Therefore 1, 5, 7, and 35 are the factor of 35.

i Factor of 60: $1 \times 60, 2 \times 30, 3 \times 20, 4 \times 15, 5 \times 12, 6 \times 10,$ $10 \times 6, 12 \times 5, 15 \times 4, 20 \times 3, 30 \times 2, 60 \times 1.$

Therefore 1, 2, 3, 4, 5, 6, 10, 12, 15, 20, 30 and 60 are the factor of 60.

j. Factor of 72: $1 \times 72, 2 \times 36, 3 \times 24, 4 \times 18, 6 \times 12, 8 \times 9, 9 \times 8,$ $12 \times 6, 18 \times 4, 24 \times 3, 36 \times 2, 7 \times 1$

Therefore: 1, 2, 3, 4, 6, 8, 9, 12, 18, 24, 36 and 72 are the factor of 72.

k. Factor of 84: $18 \times 4, 2 \times 42, 3 \times 28, 4 \times 21, 6 \times 14, 7 \times 12, 12 \times 7$ $14 \times 6, 21 \times 4, 28 \times 3, 42 \times 2, 84 \times 5.$

Therefore, 1, 2, 3, 4, 6, 7, 12, 14, 21, 28, 42 and 84 are the factor of 84.

l. Factor of 71: $1 \times 71, 71 \times 1$

Therefore, 1 and 71 are the factor of 75.

4. a. Factors of 10: 1, 2, 5, 10

Factors of 15: 1, 3, 5, 15

Common factors :1, 5.

b. Factor of 10: 1, 2, 5, 10

Factors of 25: 1, 5, 25

Common factor : 195

c. Factors of 9: 1, 3, 9

Factor of 27: 1, 3, 9, 27

Common factor: 1, 3, 9

d. Factors of 12: 1, 2, 3, 4, 6, 12
Factors of 18: 1, 2, 3, 6, 9, 18
Common factors: 1, 2, 3,

e. Factors of 21 : 1, 3, 7, 21
Factors of 30 : 1, 2, 3, 5, 6, 10, 15
Common factors : 1, 3

f. Factors of 14 : 1, 2, 7, 14
Factors of 17 : 1, 17
Factors of 22 : 1, 2, 11, 22
Common factors : 1

Exercise 5 C

1.

a. 24 = 1, 2, 3, 4, 6, 8 12, 24

b. 132 = 112, 4, 8, 16, 32

c. 75 = 1, 3, 5, 15, 25, 75

d. 2002 1, 2, 4, 5, 10, 20, 25, 50, 100

e. 144 = 1, 2, 3, 4, 6, 8, 9, 16, 18, 24, 36, 48, 72; 144

f. 162 = 1, 2, 3, 6, 9, 18, 27, 54, 81, 162

2.

a.
$$6 \overline{)36} \quad 6$$
$$-36$$
$$0$$
yes, 6 is a factor of 36

b.
$$5 \overline{)45} \quad 9$$
$$-45$$
$$0$$
yes, 5 is a factor of 45

c.
$$9 \overline{)72} \quad 8$$
$$-72$$
$$0$$
yes, 9 is a factor of 72

3. Write 'E' for even numbers and 'O' for odd numbers.

a. 41 [O] **b.** 28 [E] **c.** 87 [O] **d.** 605 [O]

e. 258 [E] **f.** 865 [O]

4.

a. odd numbers between 29 and 87 are
29, 31, 33, 35, 37, 39, 41, 43, 45, 47, 49, 51, 53, 55, 57, 59, 61, 63, 65, 67, 69, 71, 73, 75, 77, 79, 181, 83, 85, 87

b. odd numbers between 45 to 65 are
45, 47, 49, 51, 53, 55, 57, 59, 61, 63, 65.

c. odd numbers between 58 to 91 are

59, 61, 63, 65, 67, 69, 71, 73, 75, 77, 79, 81, 83, 85, 87, 89, 91

d. odd numbers between 165 to 193 are

165, 167, 169, 172, 173, 175, 177, 179, 181, 183, 185 187, 189, 191, 193

e. odd numbers from 208 to 281 are

209, 321, 213, 215, 217, 219, 221, 223, 225, 227, 229, 231

f. odd numbers between 331 to 450 are

331, 333, 335, 337, 339, 341, 343, 345, 347, 349, 351, 3 355, 357, 359, 361, 363, 365, 367, 369, 371, 373, 378, 377, 381, 383, 385, 387, 389, 391, 343, 345, 397, 399, 404, 405, 407, 409, 411, 413, 415, 417, 419, 421, 423, 425, 427, 431, 433, 435, 437, 439, 481, 443, 445, 447, 449

5.

a. Even numbers from 18 to 32

18, 20, 22, 24, 26, 28, 30, 32.

b. Even numbers from 35 to 8 are

36, 38, 40, 42, 44, 46, 48, 50, 52, 54, 56, 58.

c. Even numbers from 92 to 111 are

192, 94, 96, 98, 100, 102, 104, 106, 108, 110

d. Even numbers from 282 to 300 are

288, 290, 292, 294, 296, 298, 300.

e. Even numbers from 345 to 380 are

346, 348, 350, 352, 354, 356, 358, 360, 362, 364, 366, 3 370, 372, 374, 3760378, 380.

f. Even numbers from 499 to 519 are.

500, 502, 504, 506, 508, 510, 512, 514, 516, 518.

Exercise 5 D

1. (1), (11), ~~21~~, ~~57~~, (67), (19), ~~91~~, ~~63~~, (83), (89)

2.

a. Prime numbers between 12 and 35 are

13, 17, 19, 23, 29, 31,

b. Prime numbers between 46 and so are

47, 6, 53, 59,

c. Prime numbers between 65 and 79 are

67, 71, 73, 79

d. Prime numbers between 84 and 102

89, 97, 101

e. Prime numbers between 15 and 133 are

127, 131

3.

a. Composite numbers between 5 and 16 are

6, 8, 9, 12, 14, 16

b. Composite numbers between 34 and 43 are.

34, 35, 36, 38, 40, 42

c. Composite numbers between 45 and 52 are

45, 46, 48, 59, 49, 50, 52

d. Composite numbers between 98 and 125 are

98, 99, 100, 102, 109, 105, 106, 108, 110, 112, 114, 115, 116, 117, 118, 119, 120, 121, 122, 124, 125

e. Composite numbers from 144 to 179 are

144, 145, 146, 147, 148, 150, 152, 153, 154, 155, 156, 158, 159, 160, 161, 162, 164, 165, 166, 168, 169, 170, 171, 172, 174, 175, 176, 177, 178

4. Fill in the blanks.

a. The smallest prime number is __2__.

b. The smallest composite number is __4__.

c. Each prime number has exactly __2__factors.

d. __3__is the smallest odd prime number.

e. The smallest odd composite number is __9__ .

f. The only even prime number is __2__

g. Composite numbers between 11 and 40 are

12, 14, 15, 16, 18, 20, 21, 22, 24, 25, 26, 27, 28, 30, 32, 33, 34, 35, 36, 38, 39, 40 = 22 composite numbers.

h. Prime numbers between 30 and 50 are

31, 37, 41, 43, 47 = 5 prime numbers

Exercise 5 E

1.

a. (i)

$$\begin{array}{r} 25 \\ 8\overline{)200} \\ -16 \\ \hline 40 \\ 40 \\ \hline 0 \end{array}$$

(ii)

$$\begin{array}{r} 6 \\ 8\overline{)482} \\ -48 \\ \hline 002 \end{array}$$

(iii)

$$\begin{array}{r} 120 \\ 8\overline{)960} \\ -8 \\ \hline 16 \\ 16 \\ \hline 0 \end{array}$$

(iv)

$$\begin{array}{r} 325 \\ 8\overline{)2603} \\ -24 \\ \hline 20 \\ 16 \\ \hline 43 \\ 40 \\ \hline 3 \end{array}$$

(v)

$$\begin{array}{r} 2141 \\ 8\overline{)17130} \\ -16 \\ \hline 11 \\ 8 \\ \hline 33 \\ 32 \\ \hline 10 \\ 8 \\ \hline 2 \end{array}$$

(vi)

$$\begin{array}{r} 4555 \\ 8\overline{)36447} \\ -32 \\ \hline 44 \\ 0 \\ \hline 44 \\ 40 \\ \hline 47 \\ 40 \\ \hline 7 \end{array}$$

Hence, the number that divisible by 8 is 200, 960.

b. (i)

$$\begin{array}{r} 156 \\ 4\overline{)624} \\ -4 \\ \hline 22 \\ 20 \\ \hline 24 \\ 24 \\ \hline 0 \end{array}$$

(ii)

$$\begin{array}{r} 85 \\ 4\overline{)342} \\ -32 \\ \hline 22 \\ 20 \\ \hline 2 \end{array}$$

(iii)

$$\begin{array}{r} 236 \\ 4\overline{)944} \\ -8 \\ \hline 14 \\ 12 \\ \hline 24 \\ 24 \\ \hline 0 \end{array}$$

(iv)

$$\begin{array}{r} 650 \\ 4\overline{)2606} \\ -24 \\ \hline 20 \\ 20 \\ \hline 3 \end{array}$$

(v)

$$\begin{array}{r} 4282 \\ 4\overline{)17130} \\ -16 \\ \hline 11 \\ 8 \\ \hline 33 \\ 32 \\ \hline 10 \\ 8 \\ \hline 2 \end{array}$$

(vi)

$$\begin{array}{r} 9111 \\ 4\overline{)36447} \\ -36 \\ \hline 004 \\ 4 \\ \hline 4 \\ 4 \\ \hline 7 \\ 4 \\ \hline 3 \end{array}$$

Hence the number which is divisible by 4 is 624944

c. (i)

```
   26
9 )234 (
  -18
  ---
   54
   54
  ---
    0
  ---
```

(ii)

```
   476
9 )4284(
  -36
  ---
   68
   63
  ---
    54
    54
  ---
    00
  ---
```

(iii)

```
   1093
9 )9837(
  -9
  ---
   83
   81
  ---
    27
    27
  ---
    00
  ---
```

(iv)

```
   9496
9 )85469(
  -81
  ---
   44
   36
  ---
    86
    81
  ---
     59
     54
  ---
      5
  ---
```

(v)

```
   8764
9 )78876(
  -72
  ---
   68
   63
  ---
    57
    54
  ---
     36
     36
  ---
     00
  ---
```

(vi)

```
   1111
9 )99999(
  -9
  ---
   9
   9
  ---
    9
    9
  ---
     9
     9
  ---
       9
       9
  ---
       0
  ---
```

Hence, the numbers which are 9837, 78876 and 99999,

d. (i)

```
   81
11 )896 (
  -88
  ---
   16
   11
  ---
    5
  ---
```

(ii)

```
   194
11 )2134(
  -11
  ---
   103
    99
  ---
     44
     44
  ---
     00
  ---
```

(iii)

```
   1555
11 )17111(
  -11
  ---
   61
   55
  ---
    61
    55
  ---
     61
     55
  ---
     00
  ---
```

(iv)

```
   141
11 )1551 (
  -11
  ---
   45
   34
  ---
    11
    11
  ---
     5
  ---
```

(v)

```
   740
11 )8140 (
  -77
  ---
   44
   44
  ---
     00
  ---
```

(vi)

```
   899600
11 )9895607(
  -88
  ---
   109
    99
  ---
     105
      99
  ---
      66
      66
  ---
       07
  ---
```

Hence the number which are divisible by 11 are a 2134, 1551, 8140.

2. **a.** $5 \div 2 = 2$ remainder 1.

Not divisible by two because its unit digit is not divisible by two.

b. $1 + 8 + 5 = 14$ $14 \div 3 = 4$ remainder 2

Not divisible by three because sum of it its digit is not divisible by 3.

c. $32 \div 4 = 8$ Remainder 0

Divisible by 4 because its last two digits in divisible by 4.

d. $0 \div 5 = 0$

yes divisible by 5 because its unit digit 0.

216 $6 \div 2 = 3$ remainder 0

e. $2 + 1 + 6 = 9$

yes divisible by 6 because it is divisible by both 2 and 3.

f. Step 1: $7 \times 2 = 14$

Step 2: $460 - 14 = 32$

Step 3: $32 \div 7$ 4 remainder

Not divisible by 7

g. $678 \div 8 = 84$ remainder 6

Not divisible by 8

h. $7 + 2 + 9 = 18$

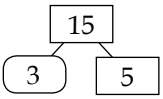
$18 - 9 = 2$

yes divisible by

Exercise 5 F

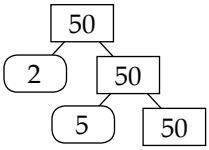
1. **a.** $2 \times 2 \times 2 \times 2$ **b.** $2 \times 3 \times 5$ **c.** $2 \times 5 \times 7$

2. **a.**



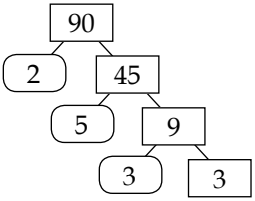
yes

b.



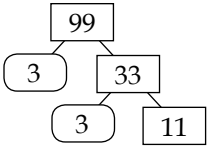
yes

c.



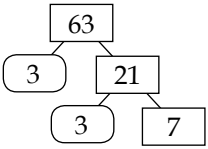
90 = 2 × 5 × 3 × 3; No

d.



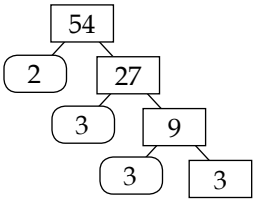
99 = 3 × 3 × 11; yes.

e.



63 = 3 × 3 × 7; No

f.



54 = 2 × 3 × 3 × 3; No.

3. Fill in the missing numbers.

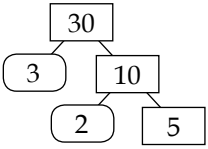
a.

2	72
2	36
2	18
3	9
3	3
	1

b.

3	75
5	25
5	5
	1

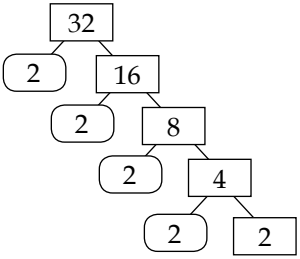
c.



d.

2	56
2	25
2	14
7	7
	1

e.



4. **a.**

2	60
2	30
2	15
5	5
	1

$60 = 2 \times 2 \times 3 \times 5$

b.

2	84
2	42
3	21
7	7
	1

$84 = 2 \times 2 \times 3 \times 7$

c.

2	180
2	90
3	45
3	15
3	5
	1

$180 = 2 \times 2 \times 3 \times 3 \times 5$

d.

2	210
3	105
5	35
	7

$210 = 2 \times 3 \times 5 \times 7$

b.

2	444
2	222
3	111
37	37
	1

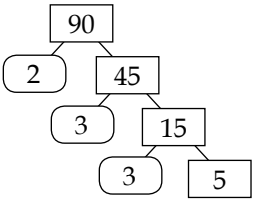
$444 = 2 \times 2 \times 3 \times 37$

c.

2	728
2	364
2	182
7	91
	13

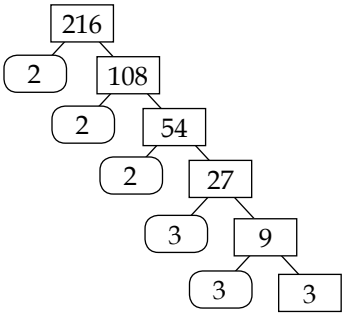
$728 = 2 \times 2 \times 2 \times 7 \times 13$

5. **a.**



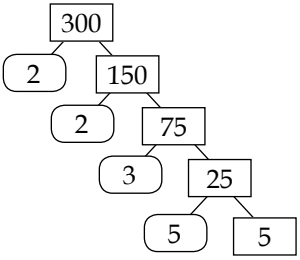
$90 = 2 \times 3 \times 3 \times 5$

b.



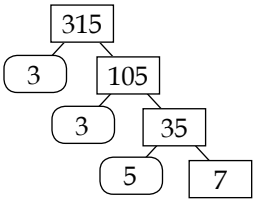
$215 = 2 \times 2 \times 2 \times 3 \times 3 \times 3$

c.



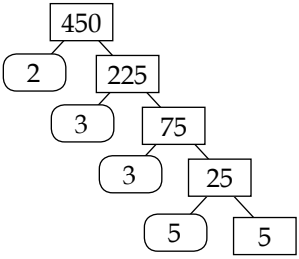
$300 = 2 \times 2 \times 3 \times 5 \times 5$

d.



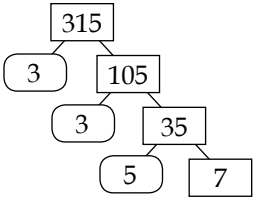
$315 = 3 \times 3 \times 5 \times 7$

e.

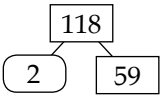


$450 = 2 \times 3 \times 3 \times 3 \times 5 \times 5$

d.



f.



$118 = 2 \times 59$

HOTS

1. We get even number when we add two odd number

ex. 3 + 3 = 6 7 + 7 = 14 9 + 9 = 18

2. We get odd number when we add a one odd number and one even number

3 + 6 = 9 4 + 5 = 9 4 + 7 = 11

3. **a.** 20 **b.** 33 **c.** 15

Mental Maths

1. The number which is neither prime nor composite is __1__.

2. The two consecutive prime numbers with difference 2 are called twin primes.

3. A number which is a factor of every number is __2__

4. The greatest 2-digit prime number is __97__

5. The smallest 3-digit composite number is __100__

6. There is no prime even number except __2__

7. **a.** 2 – 2 = 0; Divisible by 11

b. 4 – 3 = 1

1 – 1 = 0, Divisible by 11

0 – = 0

c. 5 – 0 = 5; Not Divisible by 11.

Chapter
6

XXXXX

Exercise 6 A

1. **a.** 3 = 3, 6, 9, 12, 15, 18, 21, 24, 27, 30
4 = 4, 8, 12, 16, 20, 24, 28, 32, 36, 40
Common multinues of 3 and 4 = 12, 24
LCM of 3 and = 12

b. 2 = 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26
8 = 8, 16, 24, 32, 40, 48, 56
Common multiples of 2 and 8 = 8, 16, 24
LCM of 2 and 8 = 8

c. 2 = 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 28, 30
3 = 3, 6, 9, 12, 15, 18, 21, 24, 27, 30
5 = 5, 10, 15, 20, 25, 30
Lowest common multiplies of 2, 3 and 5 is = 30

d. 6 = 6, 12, 18, 24, 30, 36, 42, 48
12 = 12, 24, 36, 48, 60, 72
8 = 8, 16, 24, 32, 40, 48
Common multiplies of 6, 12, 18 = 24, 48
Lowest common multiplies of 6, 12, 18 = 24

e. 9 = 9, 18, 27, 36, 95, 54, 63, 72, 81, 90
27 = 27, 59, 81, 108, 135, 162
Common multiplies of 9 and 27 = 27, 81
Lowest common multiples of 9 and 27 = 27

f. 5 = 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60
12 = 21, 24, 36, 48, 60
Lowest common multiples of 5 and 12 = 60

g. 4 = 4, 8, 12, 16, 20, 24, 28, 32, 36, 40
6 = 6, 12, 18, 24, 30, 36, 42
Common multiplies of 4 and 6 = 12, 24, 36
Lowest common multiplies of 4 16 = 12

2. **a.**

3	15
5	5
	1

$15 = 3 \times 5$

5	25
5	5
	1

$25 = 5 \times 5$

LCM = $3 \times 5 \times 5 = 75$

b.

3	21
7	7
	1

$21 = 3 \times 7$

5	35
7	7
	1

$35 = 5 \times 7$

LCM = $7 \times 3 \times 5 = 105$

c.

2	30
3	15
5	5
	1

$30 = 2 \times 3 \times 5$

2	50
5	25
5	5
	1

$50 = 2 \times 5 \times 5$

3	75
5	25
5	5
	1

$75 = 3 \times 5 \times 5$

LCM = $2 \times 3 \times 5 \times 5 \times 5 = 750$

d.

2	12
2	6
3	3
	1

$12 = 2 \times 2 \times 3$

2	54
3	27
3	9
3	3
	1

$54 = 2 \times 3 \times 3 \times 3$

3	66
3	33
11	11
	1

$66 = 2 \times 3 \times 11$

LCM = $2 \times 3 \times 3 \times 3 \times 3 = 1188$

e.

2	24
2	12
2	6
3	3
	1

$24 = 2 \times 2 \times 2 \times 3$

2	36
2	18
3	9
3	3
	1

$36 = 2 \times 2 \times 3 \times 3$

2	72
2	36
3	18
3	3
	1

$72 = 2 \times 2 \times 2 \times 3 \times 3$

LCM = $2 \times 2 \times 2 \times 3 \times 3 \times 3 = 216$

f.

2	32
2	16
2	8
2	4
2	2
	1

2	36
2	18
3	9
3	3
	1

$32 = 2 \times 2 \times 2 \times 2 \times 2$ $36 = 2 \times 2 \times 3 \times 3$

LCM $= 2 \times 2 \times 2 \times 2 \times 2 \times 3 \times 3 = 288$

g.

2	8
2	4
2	2
	1

2	12
2	6
3	3
	1

$8 = 2 \times 2 \times 2$ $12 = 2 \times 2 \times 3$

LCM $= 2 \times 2 \times 2 \times 3 = 24$

h.

2	56
2	28
2	14
7	7
	1

2	146
	73

$56 = 2 \times 2 \times 2 \times 7$ $146 = 2 \times 73$

LCM $= 2 \times 2 \times 2 \times 7 \times 73 = 8176$

i.

3	75
5	25
5	5
	1

2	100
2	50
5	25
5	5
	1

2	150
3	75
5	25
5	5
	1

$75 = 3 \times 5 \times 5$ $100 = 2 \times 2 \times 5 \times 5$ $150 = 2 \times 3 \times 5 \times 5$

LCM $= 2 \times 3 \times 5 \times 5 \times 2 = 300$

j.

2	210
3	105
5	35
7	7
	1

$210 = 2 \times 3 \times 5 \times 7$

2	280
2	140
2	70
5	35
7	7
	1

$280 = 2 \times 2 \times 2 \times 5 \times 7$

2	360
2	180
2	90
3	45
3	15
5	5
	1

$360 = 2 \times 2 \times 2 \times 3 \times 3 \times 5$

LCM $= 2 \times 2 \times 2 \times 3 \times 3 \times 3 \times 5 \times 7 = 52920$

k.

2	300
2	150
3	75
5	25
5	5
	1

$300 = 2 \times 2 \times 3 \times 5 \times 5$

2	400
2	200
2	100
2	50
5	25
5	5
	1

$400 = 2 \times 2 \times 2 \times 2 \times 5 \times 5$

2	700
2	350
5	175
5	35
7	7
	1

$700 = 2 \times 2 \times 5 \times 3 \times 7$

LCM $= 2 \times 2 \times 2 \times 2 \times 3 \times 5 \times 5 \times 7 = 8400$

l.

2	96
2	48
2	24
2	12
2	6
3	3
	1

2	144
2	72
2	36
2	18
3	9
3	3
	1

2	192
2	96
2	48
2	24
2	12
3	6
3	3
	1

$196 = 2 \times 2 \times 2 \times 2 \times 2 \times 3$

$144 = 2 \times 2 \times 2 \times 2 \times 3 \times 3$

$102 = 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 3$

LCM $= 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 3 \times 3$

3. **a.**

3	75, 150, 175
5	25, 50, 175
5	5, 10, 35
	1, 2, 7

LCM = 3 × 5 × 5 × 2 × 7 = 1050

b.

5	25, 35, 103
7	5, 7, 21
	5, 1, 3

LCM = 5 × 7 × 5 × 3 = 525

c.

3	63, 84 ,77
7	21 ,28 ,77
	3 ,4 ,11

LCM = 3 × 2 × 3 × 4 × 11 = 2772

d.

2	16, 34, 36
2	8, 17, 18
	4, 17, 9

LCM = 2 × 2 × 4 × 17 × 9 = 2448

e.

5	25, 50, 65
5	5, 10, 13
	1, 2, 13

LCM = 5 × 5 × 2 × 13 = 650

f.

2	256, 512, 64
2	128, 256, 32
2	64, 128, 16
2	32, 64, 8
2	16, 32, 4
2	8, 16, 2
2	4, 8, 1
2	2, 4, 1
	1, 2, 1

LCM = 2 × 2 × 2 × 2 × 2 × 2 × 2 × 2 × 2 = 572

g.

2	60, 156, 204
2	30, 78, 102
3	15, 39, 51
	5, 13, 17

LCM = 2 × 2 × 3 × 5 × 13 × 17 = 13260

h.

2	220 440 110
2	110 220 55
5	55 110 55
11	11 22 11
	1 2 1

LCM = 2 × 2 × 5 × 11 × 2 = 440

Exercise 6 B

1. **a.** 30 = 2, 3, (5), 6, 10, 15, 30
65 = (5), 13
HCF = 5

b. 170 = 2, [5], 10, 17, 85, 170
225 = 3, [5], 25, 75, 225
HCF = 5

c. 450 = 2, 5, 10, (43), 86, 215, 430
56 = 2, 3, 4, 12, (43), 86, 129, 172, 258, 516
817 = 19, (43)
CF = 43
HCF = 48

d. 64 = 1, [2], 4, 8, 16, 32, 64
70 = 1, [2], 5, 7, 10, 14, 35, 70
CF = 1, 2
HCF = 2

e. 504 = 1, (2), (3), (4), (6), 7, (8), (9), (12), 14, (18), 21, (24), 28, (36), 42, 56, 63, (72), 84, 126, 168, 252, 504

576 = 1, (2), (3), (4), (6), (8), (9), (12), 16, (18), (24), 32, (36), 48, 64, (72), 96, 144, 192, 288, 276

CF = 1, 2, 3, 4, 6, 8, 9, 12, 18, 24, 36, 72
HCF = 72

f. 102 = 1, 2, 3, 6, 17, 34, 51, 102
136 = 1, 2, 4, 8, 17, 34, 68
170 = 1, 2, 5, 10, 17, 34, 85, 170
CF = 1, 2, 17, 34
HCF = 34

g. 63 = 1, 3, 7, 9, 21, 63
140 = 1, 2, 4, 5, 7, 10, 14, 20, 28, 35, 70, 140
CF = 1, 7
HCF = 2, 7

h. 644 = 1, 2, 4, 7, 14, 23, 28, 46, 92, 161, 322, 644
1048 = 1, 2, 3, 4, 6, 9, 12, 18, 29, 36, 58, 87, 116, 174, 261, 348, 522, 1044
CF = 1, 2, 4
HCF = 4

i. 450 = 1, 2, 3, 5, 6, 9, 10, 15, 18, 25, 32, 45, 50, 75, 90, 150, 225, 450
900 = 1, 2, 3, 4, 5, 6, 9, 10, 12, 15, 18, 20, 25, 30, 36, 45, 50, 60, 75, 90, 100, 150, 180, 225, 300, 450, 900
1050 = 1, 2, 3, 5, 6, 7, 10, 14, 15, 21, 25, 30, 35, 42, 50, 70, 75, 105, 150, 175, 210, 300, 525, 1050
CF = 1, 2, 3, 5, 6, 10, 15, 25, 30, 50, 75
HCF = 75

j. 36 = 1, 2, 3, 4, 6, 9, 12, 18, 36
48 = 1, 2, 3, 4, 6, 8, 12, 16, 24, 48
54 = 1, 2, 3, 6, 9, 18, 27, 54
CF = 1, 2, 3, 6
HCE = 6

k. 36 = 1, 2, 3, 4, 6, 9, 12, 18, 3
63 = 1, 3, 7, 9, 21, 63
72 = 1, 2, 3, 4, 6, 8, 9, 12, 18, 24, 36, 72
CF = 1, 3, 9
HCF = 9

l. 18 = 1, 2, 3, 6, 9, 18
30 = 1, 2, 3, 5, 6, 10, 15, 30
48 = 1, 2, 3, 4, 6, 8, 12, 16, 24, 48

CF = 1, 2, 3, 6

HCF = 6

2. **a.**

2	28	34
	14	17

b.

2	64	72
2	32	36
2	16	18
	8	9

HCF = 2 × × 2 × 2 = 8

c.

2	84	92
2	42	46
	21	23

HCF = 2 × 2 = 4

d.

3	45	75	105
5	15	25	35
	3	5	7

HCF = 3 × 5 = 15

e. 25 = 5 × (5)

75 = 3 × 5 × (5)

90 = 2 × 3 × 3 × (5)

CF = 5

HCF = 5

f.

2	12	48	60
2	6	24	30
3	3	12	15
	1	4	5

HCF = 2 × 2 × 3 = 12

g.

2	124	640
2	62	320
	31	160

HCF = 4

h.

2	644	1044
2	322	522
	161	261

HCF = 2 × 2 = 4

i.

3	364	741	1083
13	364	247	361
	28	19	361

There is only on one common factor 1.

Do the HCF = 1

j.

3	180	225
3	60	75
5	20	25
	4	5

HCF = 3 × 3 × 5 = 45

k.

41	902	1394	3321
	22	34	81

HCF = 41

l.

	657	1387	1608

There is no prime number that can divide these numbers, so, the HCF = 1

m.

2	144	192
2	72	96
2	36	48
2	18	24
3	9	12
	3	4

So, the HCF of 144, 192 is: 2 × 2 × 2 × 2 × 3 = 48

n.

7	847	1407	1757
	121	201	251

HCF = 7

o.

3	270	945	2175
3	90	315	725
	18	63	145

HCF = 3 × 5 = 15

p.

5	35	90	105
	7	18	21

HCF = 5

3. **a.**

$$\begin{array}{r} 60\overline{)75}(1 \\ -60 \\ \hline 15\overline{)60}(4 \\ -60 \\ \hline \times \end{array}$$

HCF = 15

b.

$$\begin{array}{r} 48\overline{)60}(1 \\ -48 \\ \hline 12\overline{)48}(4 \\ -48 \\ \hline 12 \end{array}$$

HCF = 12

c.

$$\begin{array}{r} 52\overline{)78}(1 \\ -52 \\ \hline 26\overline{)52}(2 \\ -52 \\ \hline 00 \end{array}$$

HCF = 26

d.

$$\begin{array}{r} 60\overline{)72}(1 \\ -60 \\ \hline 12\overline{)60}(5 \\ -60 \\ \hline 00 \end{array}$$

HCF = 12

e.

$$\begin{array}{r} 84\overline{)105}(1 \\ -84 \\ \hline 21\overline{)84}(4 \\ -84 \\ \hline 00 \end{array}$$

HCF = 21

g.

```
605 ) 935 ( 1
    - 605
    ------
    330 ) 605 ( 1
        - 330
        ------
        275 ) 330 ( 1
            - 275
            ------
             55 ) 275 ( 1
                - 275
                ------
                   0
```

HCF = 55

h.

```
702 ) 805 ( 1
    - 725
    ------
    103 ) 702 ( 6
        - 618
        ------
         84 ) 84 ( 4
            - 76
            ----
             8 ) 19 ( 2
                - 16
                ----
                 3 ) 8 ( 2
                    - 6
                    ---
                    2 ) 3 ( 1
                       - 2
                       ---
                       1 ) 2 ( 2
                          2
                          -
                          0
```

HCF = 3

i.

```
70 ) 105 ( 1
   - 70
   ----
   35 ) 70 ( 2
      - 70
      ----
       00
```

HCF of 70 and 105 = 35

$$35\overline{)35}(1$$
$$-35$$
$$\overline{00}$$

Therefore HCF = 70, 105, 35 = 35

i.

$$210\overline{)525}(2$$
$$-420$$
$$\overline{105)210}(2$$
$$-210$$
$$\overline{000}$$

$$105\overline{)315}(3$$
$$-315$$
$$\overline{000}$$

HCF = 105

j.

$$210\overline{)525}(2$$
$$-420$$
$$\overline{105)210}(2$$
$$-210$$
$$\overline{000}$$

$$105\overline{)315}(3$$
$$-315$$
$$\overline{000}$$

HCF = 105

k.

$$80\overline{)100}(1$$
$$-80$$
$$\overline{20)80}(4$$
$$-80$$
$$\overline{00}$$

$$20\overline{)120}(6$$
$$-120$$
$$\overline{000}$$

HCF = 20

l.

575) 900 (1
– 575
325) 575 (1
– 325
250) 325 (1
– 250
75) 250 (3
– 225
25) 75 (3
– 75
00

The HCF of 575 and 900 is25

2. Find the HCF of 25, 1020

25) 1020 (40
– 1000
20) 25 (1
– 20
5) 20 (4
– 20
00

So, the HCF of 575, 900 and 1020 is 5.

m.

540) 600 (1
– 540
60) 540 (9
– 540
000

Find the HCF of 60 and 480.

60) 480 (8
– 480
000

HCF = 60

n. HCF of 140 and 168

```
140 ) 168 ( 1
    - 140
      ------
      28 ) 140 ( 5
         - 140
           -----
           000
```

HCF of 140, 168 = 28

Find the HCF of 28, 112

```
28 ) 112 ( 4
   - 112
     -----
     000
```

Do, the HCF of 112, 140, 168 is 28

O. First we find the HCF of 180 and 192

```
180 ) 192 ( 1
    - 180
      ------
      12 ) 180 ( 15
         - 12
           ----
           60
         - 60
           ----
           00
```

HCF of 180 and 192 = 12

Find the HCF of 12 and 144

```
12 ) 144 ( 12
   - 144
     -----
     000
```

so, the HCF of 144, 280, 192, is = 12

p. HCF Of 1387, 1606

```
1387 ) 1606 ( 1
     - 1387
       -------
       219 ) 1387 ( 6
           - 1314
             ------
             000
```

$$73\overline{)219}(3$$
$$-\ 219$$
$$\overline{000}$$

HCF of 1387, 1606 is 73

(ii)
$$73\overline{)657}(9$$
$$-\ 657$$
$$\overline{000}$$

Do, the HCF of 657, 1387, 1606 is 73

4.
$$18\overline{)241}(1$$
$$-\ 18$$
$$\overline{6)18}(3$$
$$\underline{18}$$
$$00$$

Greatest number = 6

5.
$$96\overline{)120}(1$$
$$-\ 96$$
$$\overline{24)96}(3$$
$$\underline{96}$$
$$00$$

Greatest number = 24

6.
$$108\overline{)144}(1$$
$$-\ 108$$
$$\overline{36)108}(3$$
$$\underline{36}$$
$$00$$

$$36\overline{)216}(6$$
$$-\ 216$$
$$\overline{000}$$

Greatest number = 36

Exercise 6 C

1. **a.** First Number = 64

second number = 80

LCM = 320

$$\text{HCE} = \frac{\text{First number} \times \text{second number}}{\text{LCM of the two numbers}}$$

$$= \frac{60 \times 80}{320} = \frac{^{16}\cancel{512\,0}}{_{1}\cancel{32\,0}}$$

b. First number = 75

HCF = 15

LCM = 300

$$\text{Second Number} = \frac{\text{LCM} \times \text{HCF}}{\text{First number}} \frac{300 \times 15}{75} = \frac{^{60}\cancel{4500}}{_{1}\cancel{75}}$$

$\therefore$ Second number = 60

c. First Number = 39

Second Number = 91

LCM = 273

$$\text{HCF} = \frac{\text{First number} \times \text{second number}}{\text{LCM of the two numbers}}$$

$$= \frac{^{1}\cancel{39} \times \cancel{91}}{\cancel{273}_{7}}$$

d. First Number = 45

Second number = 75

LCM = 15

$$\text{LCM} = \frac{\text{First Number} \times \text{Second number}}{\text{HCF}}$$

$$= \frac{^{3}\cancel{45} \times 75}{\cancel{15}}$$

LCM = 225

e. Second Number = 100

HCF = 25

LCM = 500

$$\text{First Number} = \frac{\text{LCM} \times \text{HCF}}{\text{Second number}}$$

$$= \frac{5\cancel{00} \times 25}{1\cancel{00}}$$

2. The product of two number = 3276

HCE = 6

$$\text{LCM} = \frac{\text{First number} \times \text{second number}}{\text{HCF}}$$

LCM = 546

3. Product of two number = 735

HCF = 7

$$\text{LCM} = \frac{\text{First number} \times \text{second number}}{\text{HCF}}$$

$$= \frac{\overset{105}{\cancel{735}}}{7}$$

LCM = 105

4. HCF of two number = 14

LCM of two number = 210

$$\text{Second number} = \frac{\text{LCM} \times \text{HCF}}{\text{First number}}$$

$$= \frac{\overset{3}{\cancel{210}} \times 14}{\underset{1}{\cancel{70}}}$$

= 420

5. First Number = 18

Second Number = 48

HCF = 6

$$\text{LCM} = \frac{\text{First number} \times \text{second number}}{\text{HCF}}$$

$$= \frac{\overset{3}{\cancel{18}} \times 48}{\underset{1}{\cancel{6}}} = 144$$

6. The HCF of two numbers = 31

LCM of two numbers = 2387

One number = 217

Second number: $\frac{\text{LCM} \times \text{HCF}}{\text{First number}}$

$= \frac{31 \times \overset{11}{\cancel{2387}}}{\cancel{217}}$

$= 31 \times 11 = 341$

7. The HCF of two numbers 12

LCM of the two number = 72

First number = 36

Second number = $\frac{\text{LCM} \times \text{HCF}}{\text{First number}}$

$= \frac{\overset{1}{\cancel{12}} \times \overset{24}{\cancel{72}}}{\underset{3_1}{\cancel{36}}}$

$= 24$

8. The product of two numbers = 225

HCF = 5

LCM = $\frac{\text{First Number} \times \text{Second number}}{\text{HCF}}$

$= \frac{\overset{45}{\cancel{225}}}{\underset{1}{\cancel{5}}} = 45$

9. HCF of two number = 24

First number = 72

Second number = 168

LCM = $\frac{\text{First Number} \times \text{Second number}}{\text{HCF}}$

$= \frac{\overset{3}{\cancel{72}} \times 168}{\cancel{24}}$

$= 38 \times 168 = 504$

10. The product of two number = 720

LCM = 80

$$\text{HCF} = \frac{\text{First number} \times \text{second number}}{\text{HCF}}$$

$$= \frac{\overset{9}{\cancel{720}}}{\cancel{80}} = 9$$

11. The HCF of two numbers = 26

LCM of two numbers = 1690

$$\text{Second number} = \frac{\text{LCM} \times \text{HCF}}{\text{First number}}$$

$$= \frac{\overset{26}{\cancel{1690}} \times 26}{\underset{1}{\cancel{65}}}$$

$$= 26 \times 26$$

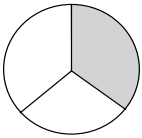
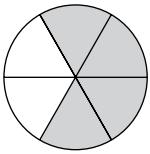
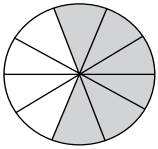
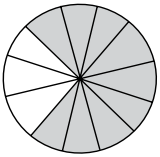
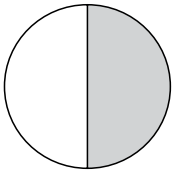
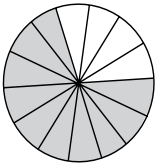
$$= 676$$

Chapter
7

XXX

Exercise 7 A

1. Complete the following table.

	Shape	Number of equal parts	Fraction for the colourd part	Fraction for the uncolourd part	Parts needed to make one whole
a.		3	$\frac{1}{3}$	$\frac{2}{3}$	3
b.		6	$\frac{2}{3}$	$\frac{1}{3}$	6
c.		10	$\frac{3}{5}$	$\frac{2}{5}$	10
d.		12	$\frac{3}{4}$	$\frac{1}{4}$	12
e.		2	$\frac{1}{2}$	$\frac{1}{2}$	2
f.		14	$\frac{5}{14}$	$\frac{9}{14}$	14

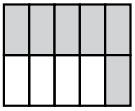
2. Divide each square into equal parts and colour to show the given fraction.

a. 

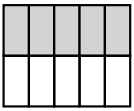
$\frac{1}{2}$

b. 

$\frac{1}{3}$

c. 

$\frac{6}{10}$

d. 

$\frac{5}{10}$

3. Match the columns.

a.	$\frac{4}{9}$	2 out of 3 equal parts	four-ninths
b.	$\frac{3}{4}$	4 out of 9 equal parts	two-thirds
c.	$\frac{2}{3}$	1 out of 3 equal parts	three-fourths
d.	$\frac{2}{8}$	3 out of 4 equal parts	quarter
e.	$\frac{1}{4}$	2 out of 8 equal parts	two-eights
f.	$\frac{1}{3}$	1 out of 4 equal parts	one-thirds

4. Fill in the numerator to make a whole.

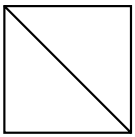
a. $\frac{\boxed{3}}{3}$ **b.** $\frac{\boxed{5}}{5}$ **c.** $\frac{\boxed{2}}{2}$ **d.** $\frac{\boxed{9}}{9}$

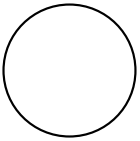
e. $\frac{\boxed{10}}{10}$ **f.** $\frac{\boxed{8}}{8}$

5. Fill in the denominator to make a whole.

a. $\frac{15}{\boxed{15}}$ **b.** $\frac{13}{\boxed{13}}$ **c.** $\frac{19}{\boxed{19}}$ **d.** $\frac{14}{\boxed{14}}$

e. $\frac{16}{\boxed{16}}$ **f.** $\frac{18}{\boxed{18}}$

6. 

7. 

Exercise 7 B

1.

a. $\frac{7}{4}$ and $\frac{2}{4}$ like fraction

b. $\frac{3}{7}$ and $\frac{3}{17}$ unlike fraction

c. $\frac{4}{11}$ and $\frac{6}{11}$ like fraction

d. $\frac{29}{39}$ and $\frac{49}{39}$ like fraction

e. $\frac{12}{55}$ and $\frac{12}{25}$ unlike fraction

f. $\frac{16}{35}$ and $\frac{18}{35}$ like fraction

2.

a. $\frac{5}{9}$ Proper fraction

b. $\frac{1}{5}$ unit fraction

c. $\frac{21}{20}$ Improper fraction

d. $\frac{45}{35}$ Improper fraction

e. $\frac{7}{17}$ Proper fraction

3.

a. $\frac{9}{2} = 4\frac{1}{2}$ **b.** $\frac{17}{8} = 2\frac{1}{8}$

c. $\frac{81}{11} = 7\frac{4}{11}$ **d.** $\frac{33}{6} = 5\frac{1}{2}$

e. $\frac{57}{4} = 14\frac{1}{4}$

4. Write the answer as Roman Numbers.

a. $\frac{2}{5} = \frac{4}{10} = \frac{6}{15} = \frac{8}{20} = \frac{10}{25}$ **b.** $\frac{1}{3} = \frac{2}{6} = \frac{3}{9} = \frac{4}{12} = \frac{5}{15}$

c. $\frac{3}{7} = \frac{6}{14} = \frac{9}{21} = \frac{12}{28} = \frac{15}{35}$ **d.** $\frac{5}{2} = \frac{10}{4} = \frac{15}{6} = \frac{20}{8} = \frac{25}{10}$

e. $\frac{5}{6} = \frac{10}{12} = \frac{15}{18} = \frac{20}{24} = \frac{25}{30}$

5. Complete the equivalent fraction tables given below.

a. Multiply numerator and denominator by 2, 3, 4 and 8.

×	**2**	**3**	**4**	**5**
$\frac{1}{2}$	$\frac{2}{4}$	$\frac{3}{6}$	$\frac{4}{8}$	$\frac{8}{16}$
$\frac{1}{3}$	$\frac{2}{6}$	$\frac{3}{9}$	$\frac{4}{12}$	$\frac{8}{24}$
$\frac{2}{3}$	$\frac{4}{6}$	$\frac{6}{9}$	$\frac{8}{12}$	$\frac{16}{24}$
$\frac{2}{5}$	$\frac{4}{10}$	$\frac{6}{15}$	$\frac{8}{20}$	$\frac{16}{40}$

b. Multiply numerator and denominator by 3, 5, 6 and 7.

×	**3**	**5**	**6**	**7**
$\frac{12}{25}$	$\frac{36}{105}$	$\frac{60}{125}$	$\frac{72}{150}$	$\frac{84}{175}$
$\frac{9}{14}$	$\frac{27}{42}$	$\frac{45}{70}$	$\frac{54}{84}$	$\frac{63}{98}$
$\frac{20}{50}$	$\frac{60}{105}$	$\frac{100}{250}$	$\frac{120}{300}$	$\frac{140}{350}$
$\frac{11}{36}$	$\frac{33}{108}$	$\frac{55}{180}$	$\frac{66}{216}$	$\frac{77}{252}$

6.

a. $\frac{2}{10} = \frac{1}{5}$

b. $\frac{3}{9} = \frac{1}{3}$

c. $\frac{5}{10} = \frac{1}{2}$

d. $\frac{6}{18} = \frac{1}{3}$

e. $\frac{18}{27} = \frac{2}{3}$

f. $\frac{14}{21} = \frac{2}{3}$

g. $\frac{14}{49} = \frac{2}{7}$

h. $\frac{15}{20} = \frac{3}{4}$

i. $\frac{10}{40} = \frac{1}{4}$

Exercise 7 C

1.

a. $\frac{3}{7} \boxed{<} \frac{5}{7}$

b. $\frac{6}{7} \boxed{>} \frac{6}{11}$

c. $\frac{2}{3} \boxed{>} \frac{2}{4}$

d. $\frac{11}{15} \boxed{>} \frac{3}{15}$

e. $\frac{2}{5} \boxed{=} \frac{4}{10}$

f. $\frac{5}{12} \boxed{<} \frac{5}{11}$

g. $\frac{8}{3} \boxed{>} \frac{2}{3}$

h. $\frac{5}{8} \boxed{>} \frac{4}{9}$

i. $\frac{6}{12} \boxed{=} \frac{3}{4}$

j. $\frac{53}{21} \boxed{>} \frac{53}{22}$

2.

a. $\frac{1}{7}$ and $\frac{6}{16}$

Solution :-

We first cross multiply the given fraction.

$\frac{1}{7} \times \frac{3}{8}$ gives $1 \times 8 = 8; 3 \times 7 = 21$

Comparing Product we get $3 < 14$ Thus, $\frac{1}{7} < \frac{3}{8}$

b. $\frac{6}{8}$ and $\frac{3}{4}$

Solution :-

We first cross multiply the given fractions

$\frac{6}{8} \times \frac{3}{4}$ gives $6 \times 4 = 24; 3 \times 8 = 24$

Comparing Product we get $24 =$ Thus, $\frac{6}{8} = \frac{3}{4}$

c. $\frac{5}{4}$ and $\frac{4}{3}$

Solution :-

We first cross multiply the given fractions.

$\frac{5}{4} \times \frac{4}{3}$ gives $5 \times 3\ 15 ; 4 \times 4 = 16$

Comparing Product we get 15 < 16 Thus, $\frac{5}{4} < \frac{4}{3}$

d. $\frac{3}{3}$ and $\frac{5}{5}$

Solution :-

We first cross multiply the given fractions.

$\frac{3}{3} \times \frac{5}{5}$ gives 3×5 15 ; $5 \times 3 = 15$

Comparing Product we get 15 = 15 Thus, $\frac{3}{3} = \frac{5}{5}$

e. $\frac{2}{3}$ and $\frac{7}{25}$

Solution :-

We first cross multiply the given fractions.

$\frac{2}{3} \times \frac{7}{25}$ gives $3 \times 25 = 75$; $7 \times 3 = 21$

Comparing Product we get 24 = Thus, $\frac{2}{3} > \frac{7}{25}$

3.

a. The given fractions are like, so we get the Ascending Order.

$$\frac{1}{5} < \frac{2}{5} < \frac{4}{5} < \frac{7}{5}$$

The given fractions are like, So we get the descending order.

$$\frac{7}{5} > \frac{4}{5} > \frac{2}{5} < \frac{1}{5}$$

b. The given fractions are like, So we get the Ascending order.

$$\frac{5}{7} < \frac{8}{7} < \frac{11}{7} < \frac{13}{7}$$

The given fractions are like, So we get the Ascending order.

$$\frac{13}{7} > \frac{11}{7} > \frac{8}{7} > \frac{5}{7}$$

c. The fractions have like numerators and unlike denominators, So we get Ascending order.

$$\frac{3}{15} < \frac{3}{8} < \frac{3}{5} < \frac{3}{4}$$

The fractions have like numerators and unlike denominators, So we get descending order.

$$\frac{3}{4} > \frac{3}{5} > \frac{3}{8} > \frac{3}{15}$$

d. The given fractions are like, So we get the Ascending order.

$$\frac{1}{9} < \frac{2}{9} < \frac{6}{9} < \frac{7}{9}$$

The given fractions are like, So we get the descending order.

$$\frac{7}{9} > \frac{6}{9} > \frac{2}{9} > \frac{1}{9}$$

e. The fractions have like numerators and unlike denominators, So we get Ascending order.

$$\frac{14}{13} < \frac{14}{9} < \frac{14}{8} < \frac{14}{4}$$

The fractions have like numerators and unlike denominators, So we get Descending order.

$$\frac{14}{4} > \frac{14}{8} > \frac{14}{9} > \frac{14}{13}$$

f. The given fractions are like, So we get the Ascending order.

$$\frac{2}{11} < \frac{3}{11} < \frac{7}{11} < \frac{15}{11}$$

The given fractions are like, So we get the Descending order.

$$\frac{15}{11} > \frac{7}{11} > \frac{3}{11} > \frac{2}{11}$$

4.

a. The fractions are unlike, the LCM of their denominator.

2	4, 5, 10, 16,
2	2, 5, 5, 8
2	1, 5, 5, 4
2	1, 5, 5, 2
5	1, 5, 5, 1
	1, 1, 1, 1,

L.C.M = $2 \times 2 \times 2 \times 2 \times 5 = 80$

equivalent fraction with denominator 80.

$$\frac{1 \times 20}{4 \times 20}, \frac{2 \times 16}{5 \times 16}, \frac{3 \times 8}{16 \times 8}, \frac{5 \times 5}{16 \times 5}$$

$$\frac{20}{80}, \frac{32}{80}, \frac{24}{80}, \frac{25}{80}$$

fractions in ascending order.

$\frac{20}{80} < \frac{32}{80} < \frac{24}{80} < \frac{25}{80}$ or $\frac{1}{4} < \frac{3}{10} < \frac{5}{16} < \frac{2}{5}$

b. The fractions are unlike, the LCM of their denominator.

2	**5, 10, 15, 25**
3	**5, 5, 3, 25**
5	**5, 5, 1, 25**
5	**1, 1, 1, 5**
	1, 1, 1, 1,

L.C.M = 2 × 3 × 5 × 5 = 150

Equivalent fractions with denominator 150.

$\frac{2\times30}{5\times30}, \frac{1\times15}{10\times15}, \frac{3\times10}{15\times10}, \frac{7\times6}{25\times6}$

$\frac{60}{150}, \frac{15}{150}, \frac{30}{150}, \frac{42}{150}$

fractions in ascending order.

$\frac{15}{150} < \frac{30}{150} < \frac{42}{150} < \frac{60}{150}$ or $\frac{1}{10} < \frac{3}{15} < \frac{7}{25} < \frac{2}{5}$

c. The fractions are unlike, the LCM of their denominator.

Equivalent fractions with denominator

2	2, 8, 6, 10
2	1, 4, 3, 5
2	1, 2, 3, 5
3	1, 1, 3, 5
5	1, 1, 1, 5
	1, 1, 1, 1,

L.C.M = 2 × 2 × 2 × 3 × 5 = 120

$\frac{3\times60}{2\times60}, \frac{1\times150}{8\times15}, \frac{2\times20}{6\times20}, \frac{3\times12}{10\times12}$

$\frac{180}{120}, \frac{150}{120}, \frac{40}{120}, \frac{36}{120}$

fractions in ascending order.

$\frac{15}{120} < \frac{36}{120} < \frac{40}{120} < \frac{180}{120}$ or $\frac{1}{8} < \frac{3}{10} < \frac{2}{6} < \frac{3}{2}$

d. The fractions are unlike, the LCM of their denominator.

Equivalent fractions with denominator

3	3, 6, 9, 9
3	1, 2, 3, 3
2	1, 2, 1, 1
	1, 1, 1, 1,

LCM = 3 × 3 × 2 = 18

$$\frac{1\times6}{3\times6}, \frac{5\times3}{6\times3}, \frac{4\times2}{9\times2}, \frac{1\times2}{9\times2}$$

$$\frac{1}{18}, \frac{15}{18}, \frac{8}{18}, \frac{2}{18}$$

fractions in ascending order.

$$\frac{2}{18}<\frac{6}{18}<\frac{8}{18}<\frac{15}{18} \quad \text{or} \quad \frac{1}{2}<\frac{1}{3}<\frac{4}{9}<\frac{5}{6}$$

e. The fractions are unlike, the LCM of their denominator.

Equivalent fractions with denominator

2	8, 10, 6, 20
2	4, 5, 3, 10
2	2, 5, 3, 5
3	1, 5, 3, 5
5	1, 5, 1, 5
	1, 1, 1, 1,

LCM = 2 × 2 × 2 × 3 × 5 = 120

$$\frac{5\times15}{8\times15}, \frac{15\times12}{10\times12}, \frac{12\times20}{6\times20}, \frac{8\times6}{20\times6}$$

$$\frac{75}{120}, \frac{180}{120}, \frac{240}{120}, \frac{48}{120}$$

fractions in ascending order.

$$\frac{48}{120}<\frac{75}{120}<\frac{180}{120}<\frac{240}{120} \quad \text{or} \quad \frac{8}{20}<\frac{5}{8}<\frac{15}{10}<\frac{12}{6}$$

f. The fractions are unlike, the LCM of their denominator.

Equivalent fractions with denominator

2	6, 12, 13, 24
2	3, 6, 13, 12
3	3, 3, 13, 4
2	1, 1, 13, 4
2	1, 1, 13, 2
13	1, 1, 13, 1
	1, 1, 1, 1,

LCM = $2 \times 2 \times 3 \times 2 \times 2 \times 13 = 624$

$\frac{15 \times 104}{6 \times 104}, \frac{13 \times 52}{12 \times 52}, \frac{14 \times 48}{13 \times 48}, \frac{16 \times 26}{24 \times 26}$

$\frac{1560}{624}, \frac{676}{624}, \frac{672}{624}, \frac{416}{624}$

fractions in ascending order.

$\frac{416}{624}, \frac{672}{624}, \frac{676}{624}, \frac{1560}{624}$ or $\frac{16}{24} < \frac{14}{13} < \frac{13}{12} < \frac{15}{6}$

5.

a. The fractions are unlike, the LCM of their denominator.

2	9, 3, 9, 12
2	9, 3, 9, 6
3	9, 3, 9, 3
3	3, 1, 3, 1
	1, 1, 1, 1,

LCM = $2 \times 2 \times 3 \times 3 = 36$

Equivalent fractions with denominator .

$\frac{2 \times 4}{9 \times 4}, \frac{1 \times 12}{3 \times 12}, \frac{4 \times 4}{9 \times 4}, \frac{5 \times 3}{12 \times 3}$

$\frac{8}{36}, \frac{12}{36}, \frac{16}{36}, \frac{15}{36}$

fraction descending order.

$\frac{16}{36} > \frac{15}{36} > \frac{12}{36} > \frac{8}{36}$ or $\frac{4}{9} > \frac{5}{12} > \frac{1}{3} > \frac{2}{9}$

b. The fractions are unlike, the LCM of their denominator.

2	5, 10, 15, 20
2	5, 5, 15, 10
3	5, 5, 15, 5
5	5, 5, 5, 5
	1, 1, 1, 1,

LCM = 2 × 2 × 3 × 5 = 60

Equivalent fractions with denominator .

$\frac{2\times12}{5\times12}, \frac{3\times6}{10\times6}, \frac{4\times4}{15\times4}, \frac{7\times3}{20\times3}$

$\frac{24}{60}, \frac{18}{60}, \frac{16}{60}, \frac{21}{60}$

fraction descending order.

$\frac{24}{60} > \frac{21}{60} > \frac{18}{60} > \frac{16}{60}$ or $\frac{2}{5} > \frac{7}{20} > \frac{3}{10} > \frac{4}{15}$

c. The fractions are unlike, the LCM of their denominator.

2	6, 4, 3, 12
2	3, 2, 3, 6
3	3, 1, 3, 3
	1, 1, 1, 1,

LCM = 2 × 2 × 3 = 12

Equivalent fractions with denominator .

$\frac{1\times2}{6\times2}, \frac{3\times3}{4\times3}, \frac{4\times4}{3\times4}, \frac{7\times1}{12\times1}$

$\frac{2}{12}, \frac{9}{12}, \frac{16}{12}, \frac{7}{12}$

fraction descending order.

$\frac{16}{12} > \frac{9}{12} > \frac{7}{12} > \frac{2}{12}$ or $\frac{4}{3} > \frac{3}{4} > \frac{7}{12} > \frac{1}{6}$

d. The fractions are unlike, the LCM of their denominator.

2	4, 8, 12, 4
2	2, 4, 6, 2
2	1, 2, 3, 1
3	1, 1, 3, 1,
	1, 1, 1, 1,

LCM = 2 × 2 × 2 × 3 = 24

Equivalent fractions with denominator .

$\frac{1\times 6}{4\times 6}, \frac{3\times 3}{8\times 3}, \frac{5\times 2}{12\times 4}, \frac{3\times 6}{4\times 6}$

$\frac{6}{24}, \frac{9}{24}, \frac{12}{24}, \frac{18}{24}$

fraction descending order.

$\frac{18}{24} > \frac{12}{24} > \frac{9}{24} > \frac{6}{24}$ or $\frac{3}{4} > \frac{5}{12} > \frac{3}{8} > \frac{1}{4}$

e. The fractions are unlike, the LCM of their denominator.

2	8, 16, 18, 20
2	4, 8, 9, 10
2	2, 4, 9, 5
2	1, 2, 9, 5,
5	1, 1, 9, 5
9	1, 1, 9, 1
	1, 1, 1, 1,

LCM = 2 × 2 × 2 × 2 × 5 × 9 = 24

Equivalent fractions with denominator .

$\frac{6\times 90}{8\times 90}, \frac{20\times 45}{16\times 45}, \frac{25\times 40}{18\times 40}, \frac{15\times 36}{20\times 36}$

$\frac{540}{720}, \frac{900}{720}, \frac{1000}{720}, \frac{540}{720}$

Fraction descending order.

$\frac{1000}{720} > \frac{900}{720} > \frac{540}{720} = \frac{540}{720}$ or $\frac{25}{18} > \frac{20}{16} > \frac{15}{20} = \frac{6}{8}$

f. The fractions are unlike, the LCM of their denominator.

2	7, 14, 20, 14
2	7, 7, 10, 7
5	7, 7, 5, 7
7	7, 7, 1, 7,
	1, 1, 1, 1,

LCM = 2 × 2 × 5 × 7 = 140

Equivalent fractions with denominator .

$\frac{9\times 20}{7\times 20}, \frac{17\times 10}{14\times 10}, \frac{19\times 7}{20\times 7}, \frac{26\times 10}{14\times 10}$

$\frac{180}{140}, \frac{170}{140}, \frac{133}{140}, \frac{260}{140}$

fraction descending order.

$\frac{260}{140} > \frac{180}{140} > \frac{170}{140} > \frac{133}{140}$ or $\frac{26}{4} < \frac{9}{7} < \frac{17}{14} > \frac{19}{20}$

Exercise 7 D

1.

a. Since the denominator are Same, we simply add the numerator.

$$\frac{3}{8} + \frac{1}{8} = \frac{3+1}{8} = \frac{4}{8} = \frac{1}{2}$$

b. Since the denominator are Same, we simply add the numerator.

$$\frac{7}{7} + \frac{1}{7} + \frac{2}{2} = \frac{7+1+2}{7} = \frac{10}{7}$$

mixed fraction = $1\frac{3}{7}$

c. Since the denominator are Same, we simply add the numerator.

$$\frac{2}{8} + \frac{1}{8} + \frac{5}{8} = \frac{2+1+5}{8} = \frac{8}{8} = 1$$

d. Since the denominator are Same, we simply add the numerator.

$$\frac{9}{11} + \frac{4}{11} + \frac{3}{11} = \frac{9+4+3}{11} = \frac{16}{11}$$

mixed fraction = $1\frac{5}{11}$

e. Since the denominator are Same, we simply add the numerator.

$$\frac{15}{10} + \frac{9}{10} = \frac{15+9}{10} = \frac{24}{10} = \frac{12}{5}$$

mixed fraction = $2\frac{2}{5}$

e. Since the denominator are Same, we simply add the numerator.

$$\frac{1}{7} + \frac{1}{7} + \frac{1}{7} = \frac{1+1+1}{7} = \frac{3}{7}$$

2.

a. Make the denominators Same by taking L. C. M

$$\frac{4}{7}=\frac{4\times3}{7\times3}=\frac{12}{21}$$

$$\frac{6}{21}=\frac{6\times1}{21\times1}=\frac{6}{21}$$

3	7, 21
7	7, 7
	1, 1

L.C.M = 3 × 7 = 21

So, $\frac{12}{21}+\frac{6}{21}=\frac{12+6}{21}=\frac{18}{21}=\frac{6}{7}$

b. Make the denominators Same by taking L. C. M

$$\frac{8}{15}=\frac{8\times3}{15\times3}=\frac{24}{45}$$

$$\frac{16}{45}=\frac{16\times1}{45\times1}=\frac{16}{45}$$

3	15, 45
3	5, 15
5	5, 5
	1, 1

L.C.M = 3 × 3 × 5 = 45

So, $\frac{24}{45}+\frac{16}{45}=\frac{40}{45}=\frac{8}{9}$

c. Make the denominators Same by taking L. C. M

$$\frac{7}{10}=\frac{7\times4}{10\times4}=\frac{28}{40}$$

$$\frac{6}{40}=\frac{6\times1}{40\times1}=\frac{6}{40}$$

2	10, 40
2	5, 20
2	5, 10
5	5, 5
	1, 1

L.C.M = 2 × 2 × 2 × 5 = 40

So, $\frac{28}{40}+\frac{6}{40}\frac{28+6}{40}=\frac{34}{40}=\frac{17}{40}$

mixed fraction = $8\frac{1}{2}$

d. Make the denominators Same by taking L. C. M

$\frac{9}{12}=\frac{9\times3}{12\times3}=\frac{27}{36}$

$\frac{14}{18}=\frac{14\times2}{18\times2}=\frac{28}{36}$

2	12, 18
2	6, 9
3	3, 9
3	1, 3
	1, 1

L.C.M = 2 × 2 × 3 × 3 = 36

So, $\frac{27}{36}+\frac{28}{36}=\frac{55}{36}$

mixed fraction = $1\frac{19}{36}$

e. Make the denominators Same by taking L. C. M

$\frac{11}{13}=\frac{11\times3}{13\times3}=\frac{33}{39}$

$\frac{18}{39}=\frac{18\times1}{39\times1}=\frac{18}{39}$

3	13, 39
13	13, 13
	1, 1

L.C.M = 3 × 13 = 39

So, $\frac{33}{39}+\frac{18}{39}=\frac{33+18}{39}=\frac{51}{39}=\frac{17}{39}$

mixed fraction = $1\frac{4}{13}$

f. Make the denominators Same by taking L. C. M

$\frac{2}{3}=\frac{2\times20}{3\times20}=\frac{40}{60}$

$$\frac{1}{4}=\frac{1\times15}{4\times15}=\frac{15}{60}$$

$$\frac{4}{5}=\frac{4\times12}{5\times12}=\frac{48}{60}$$

3	3, 4, 5
4	3, 4, 5
5	1, 1, 5
	1, 1, 1

L.C.M = 3 × 2 × 5 = 60

So, $\frac{40}{60}+\frac{15}{60}+\frac{48}{60}=\frac{40+15\,48}{60}=\frac{103}{60}$

mixed fraction = $1\frac{43}{60}$

g. Make the denominators Same by taking L. C. M

$$\frac{2}{7}=\frac{2\times5}{7\times5}=\frac{10}{35}$$

$$\frac{1}{5}=\frac{1\times7}{5\times7}=\frac{7}{35}$$

$$\frac{4}{7}=\frac{4\times5}{7\times5}=\frac{20}{35}$$

5	7, 5, 7
7	7, 1, 7
	1, 1, 1

L.C.M = 5 × 7 = 35

So, $\frac{10}{35}+\frac{7}{35}+\frac{20}{35}=\frac{10+7+20}{35}=\frac{37}{35}$

mixed fraction = $1\frac{2}{35}$

h. Since the denominator are some we simply add the numerator.

$$\frac{6+1+4}{17}=\frac{11}{17}$$

i. Make the denominators Same by taking L. C. M

$$\frac{4}{4}=\frac{4\times35}{4\times35}=\frac{140}{140}$$

$$\frac{5}{5}=\frac{5\times 28}{5\times 28}=\frac{140}{140}$$

$$\frac{1}{7}=\frac{1\times 20}{7\times 20}=\frac{20}{140}$$

2	4, 5, 7
2	2, 5, 7
5	1, 5, 7
7	1, 1, 7
	1, 1, 1

L.C.M = 2 × 2 × 5 × 7 = 140

So, $\frac{140}{140}+\frac{140}{140}+\frac{20}{140}+\frac{140+140+20}{140}=\frac{300}{140}=\frac{15}{7}$

mixed fraction = $2\frac{1}{7}$

j. Make the denominators Same by taking L. C. M

$$\frac{7}{8}=\frac{7\times 3}{8\times 3}=\frac{21}{24}$$

$$\frac{1}{4}=\frac{1\times 6}{4\times 6}=\frac{6}{24}$$

$$\frac{5}{6}=\frac{5\times 4}{6\times 4}=\frac{20}{24}$$

2	8, 4, 6
2	4, 2, 3
2	2, 1, 3
3	1, 1, 3
	1, 1, 1

L.C.M = 2 × 2 × 2 × 3 = 24

So, $\frac{21}{24}+\frac{6}{24}+\frac{20}{24}=\frac{21+6+20}{24}=\frac{47}{24}$

mixed fraction = $1\frac{23}{24}$

k. Make the denominators Same by taking L. C. M

$$\frac{1}{3}=\frac{1\times 20}{3\times 20}=\frac{20}{60}$$

$$\frac{1}{4}=\frac{1\times 15}{4\times 15}=\frac{15}{60}$$

$$\frac{2}{5}=\frac{2\times12}{5\times12}=\frac{34}{60}$$

2	3, 4, 5
2	3, 2, 5
3	3, 1, 5
5	1, 1, 5
	1, 1, 1

L.C.M = 2 × 2 × 3 × 5 = 60

So, $\frac{20}{60}+\frac{20}{60}+\frac{40}{60}=\frac{20+15+24}{60}=\frac{59}{60}$

l. Make the denominators Same by taking L. C. M

$$\frac{2}{3}=\frac{2\times20}{3\times20}=\frac{40}{60}$$

$$\frac{4}{5}=\frac{4\times12}{5\times12}=\frac{48}{60}$$

$$\frac{3}{4}=\frac{3\times15}{4\times15}=\frac{45}{60}$$

2	3, 5, 4
2	3, 5, 2
3	3, 5, 1
5	1, 5, 1
	1, 1, 1

L.C.M = 2 × 2 × 3 × 5 = 60

So, $\frac{40}{60}+\frac{48}{60}+\frac{45}{60}=\frac{40+48\,45}{60}=\frac{133}{60}$

mixed fraction $2\frac{13}{60}$

Exercise 7 E

1.

a. Take 1 as denominator of wholw number.

$$\frac{3}{1}+\frac{3}{7}$$

7	1, 7
	1, 1

take the L. C. M $7 \times 1 = 7$

$$\frac{3}{1} = \frac{3 \times 7}{1 \times 7} = \frac{21}{7}$$

$$\frac{3}{7} = \frac{3}{7} = \frac{3}{7}$$

$$\frac{21}{7} + \frac{3}{7} = \frac{21+3}{7} = \frac{24}{7} = 3\frac{3}{7}$$

b. Take 1 as denominator of whole number.

$$\frac{4}{1} + \frac{2}{5}$$

5	1, 5
	1, 1

take the L.C.M $5 \times 1 = 5$

$$\frac{4}{1} = \frac{4 \times 5}{1 \times 5} = \frac{20}{5}$$

$$\frac{2}{5} = \frac{2}{5}$$

$$\frac{20}{5} + \frac{2}{5} = \frac{20+2}{5} = 4\frac{2}{5}$$

c. Take 1 as denominator of wholw number.

$$\frac{5}{13} + \frac{3}{1}$$

13	13, 1
	1, 1

take the L. C. M $13 \times 1 = 13$

$$\frac{5}{13} = \frac{5}{13} = \frac{5}{13}$$

$$\frac{3}{1} = \frac{3 \times 13}{1 \times 13} = \frac{39}{13}$$

$$\frac{5}{13} + \frac{39}{13} = \frac{5+39}{13} = \frac{44}{13} = 3\frac{5}{13}$$

d. $\frac{5}{7} + 1\frac{2}{7} = \frac{5}{7} + \frac{9}{7}$

Since, the denominator is same, we simply add the numerator.

$$\frac{5}{7} + \frac{9}{7} = \frac{5+9}{7} = \frac{14}{7} = 2$$

2.

a. $7+\frac{1}{5}+4\frac{4}{5}=\frac{7}{1}+\frac{1}{5}+\frac{24}{5}$

5	1, 5, 5
	1, 1, 1

Take the L. C. M = 5 × 1 = 5

$\frac{7}{1}=\frac{7\times5}{1\times5}=\frac{35}{5}$

$\frac{1}{5}=\frac{1}{5},\frac{24}{5}=\frac{24}{5}$

$\frac{35}{5}+\frac{24}{5}+\frac{1}{5}=\frac{60}{5}=12$

b. $\frac{2}{5}+5+\frac{1}{3}=\frac{2}{5}+\frac{5}{1}+\frac{1}{3}$

3	1, 5, 5
5	5, 1, 1
	1, 1, 1

Take the L. C. M = 3 × 5 = 15

$\frac{2}{5}=\frac{2\times3}{5\times3}=\frac{6}{15}$

$\frac{5}{1}=\frac{5\times15}{1\times15}=\frac{75}{15}$

$\frac{1}{3}=\frac{1\times5}{3\times5}=\frac{5}{15}$

$\frac{6}{15}+\frac{75}{15}+\frac{5}{15}=\frac{6+75+5}{15}=\frac{86}{15}=5\frac{11}{5}$

c. $6+\frac{4}{5}+3\frac{2}{5}=\frac{6}{1}+\frac{4}{5}+\frac{17}{5}$

5	1, 5, 5
	1, 1, 1

Take the L. C. M = 5 × 1 = 5

$\frac{6}{1}+\frac{6\times5}{1\times5}=\frac{30}{5},\frac{4}{5},\frac{17}{5}$

$\frac{30}{5}+\frac{4}{5}+\frac{17}{5}=\frac{30+4+17}{5}=\frac{51}{5}=10\frac{1}{5}$

d. $\frac{2}{5}+5+\frac{1}{3}=\frac{2}{5}+\frac{5}{1}+\frac{1}{3}$

2	2, 2, 1
	1, 1, 1

Take the L. C. M = 2 × 1 = 2

$5+\frac{1}{2}+2\frac{1}{2}=\frac{5}{1}+\frac{1}{2}+\frac{5}{2}$

$\frac{5}{1}=\frac{5\times 2}{1\times 2}=\frac{10}{2}, \frac{1}{2}, \frac{5}{2}$

$\frac{10}{2}+\frac{1}{2}+\frac{5}{2}=\frac{10+1+5}{2}=\frac{16}{2}=8$

Exercise 7 F

1.

a. Since, the denominators are same we simply subtract the numerators.

$$\frac{8}{15}-\frac{6}{15}=\frac{8-6}{15}=\frac{2}{15}$$

b. Since, the denominators are same we simply subtract the numerators.

$$\frac{9}{5}-\frac{7}{5}=\frac{9-7}{5}=\frac{2}{5}$$

c. Since, the denominators are same we simply subtract the numerators.

$$\frac{11}{7}-\frac{5}{7}=\frac{11-5}{7}=\frac{6}{7}$$

d. Since, the denominators are same we simply subtract the numerators.

$$\frac{42}{43}-\frac{37}{43}=\frac{42-37}{43}=\frac{5}{43}$$

e. Since, the denominators are same we simply subtract the numerators.

$$\frac{44}{47}-\frac{24}{47}=\frac{44-24}{47}=\frac{20}{47}$$

f. Since, the denominators are same we simply subtract the numerators.

$$\frac{17}{23}-\frac{1}{23}=\frac{17-1}{23}=\frac{16}{23}$$

g. Since, the denominators are same we simply subtract the numerators.

$$\frac{24}{29}-\frac{21}{29}=\frac{24-21}{29}=\frac{3}{29}$$

h. Since, the denominators are same we simply subtract the numerators.

$$\frac{11}{13}-\frac{1}{13}=\frac{11-1}{13}=\frac{10}{13}$$

i. Since, the denominators are same we simply subtract the numerators.

$$\frac{18}{19}-\frac{9}{19}=\frac{18-9}{19}=\frac{9}{19}$$

j. Since, the denominators are same we simply subtract the numerators.

$$\frac{7}{9}-\frac{4}{9}=\frac{7-4}{9}=\frac{5}{9}$$

k. Since, the denominators are same we simply subtract the numerators.

$$\frac{9}{31}-\frac{3}{31}=\frac{9-3}{31}=\frac{6}{31}$$

l. Since, the denominators are same we simply subtract the numerators.

$$\frac{11}{16}-\frac{8}{16}=\frac{11-8}{16}=\frac{3}{16}$$

2.

a. Since,the denominators are different, we take the LCM.

$$\frac{8}{9}=\frac{8\times5}{9\times5}=\frac{40}{45}$$

5	9, 5
3	9, 1
3	3, 1
	1, 1

Take the L. C. M = 5 × 3 × 3 = 45

$$\frac{1}{5}=\frac{1\times9}{5\times9}=\frac{9}{45}$$

$$\frac{40}{45}-\frac{9}{45}=\frac{40-9}{45}=\frac{31}{45}$$

b. Since,the denominators are different, we take the LCM.

$$\frac{2}{5}=\frac{2\times 2}{5\times 2}=\frac{4}{10}$$

2	5, 10
5	1, 5
	1, 1

Take the L. C. M = 2 × 5 = 10

$$\frac{1}{10}=\frac{1\times 1}{10\times 1}=\frac{1}{10}$$

$$\frac{4}{10}-\frac{1}{10}=\frac{4-1}{10}=\frac{3}{10}$$

c. Since,the denominators are different, we take the LCM.

$$\frac{5}{6}=\frac{5\times 7}{6\times 7}=\frac{35}{42}$$

2	6, 7
3	3, 7
7	1, 7
	1, 1

Take the L. C. M = 2 × 3 × 7 = 42

$$\frac{2}{7}=\frac{2\times 6}{7\times 6}=\frac{12}{42}$$

$$\frac{35}{42}-\frac{12}{42}=\frac{35-12}{42}=\frac{23}{42}$$

d. Since,the denominators are different, we take the LCM.

$$\frac{5}{8}=\frac{5\times 7}{8\times 7}=\frac{35}{56}$$

2	6, 7
2	3, 7
2	1, 7
7	1, 1

Take the L. C. M = 2 × 2 × 2 × 7= 56

$$\frac{1}{7}=\frac{1\times 8}{7\times 8}=\frac{8}{56}$$

$$\frac{35}{56}-\frac{8}{56}=\frac{35-8}{56}=\frac{27}{56}$$

e. Since,the denominators are different, we take the LCM.

$$\frac{10}{11}=\frac{10\times 2}{11\times 2}=\frac{20}{22}$$

2	11, 2
11	11, 1
	1, 1

Take the L. C. M = 2 × 11 = 22

$$\frac{1}{2}=\frac{1\times 11}{2\times 11}=\frac{1}{22}$$

$$\frac{20}{22}-\frac{11}{22}=\frac{20-11}{22}=\frac{9}{22}$$

f. Since,the denominators are different, we take the LCM.

$$\frac{5}{4}=\frac{5\times 7}{4\times 7}=\frac{35}{28}$$

2	4, 7
2	2, 7
7	1, 7
	1, 1

Take the L. C. M = 2 × 2 × 7 = 28

$$\frac{2}{7}=\frac{2\times 4}{7\times 4}=\frac{8}{28}$$

$$\frac{35}{28}-\frac{8}{28}=\frac{35-8}{28}=\frac{20}{22}$$

g. Since,the denominators are different, we take the LCM.

$$\frac{1}{3}=\frac{1\times 8}{3\times 8}=\frac{8}{24}$$

2	3, 8
2	3, 4
2	3, 2
3	3, 1
	1, 1

Take the L. C. M = 2 × 2 × 2 × 3 = 24

$$\frac{1}{8}=\frac{1\times 3}{8\times 3}=\frac{3}{24}$$

$$\frac{8}{24}-\frac{3}{24}=\frac{8-3}{24}=\frac{5}{24}$$

h. Since,the denominators are different, we take the LCM.

$$\frac{4}{5}=\frac{4\times3}{5\times3}=\frac{12}{15}$$

3	5, 3
5	5, 1
	1, 1

Take the L. C. M = 3 × 5 = 15

$$\frac{2}{3}=\frac{2\times5}{3\times5}=\frac{10}{15}$$

$$\frac{12}{15}-\frac{10}{15}=\frac{12-10}{15}=\frac{2}{15}$$

i. Since,the denominators are different, we take the LCM.

$$\frac{8}{13}=\frac{8\times9}{13\times9}=\frac{72}{117}$$

3	13, 9
3	13, 3
13	13, 1
	1, 1

Take the L. C. M = 3 × 3 × 13 = 117

$$\frac{3}{9}=\frac{3\times13}{9\times13}=\frac{39}{117}$$

$$\frac{72}{117}-\frac{39}{117}=\frac{72-39}{117}=\frac{33}{117}$$

j. Since,the denominators are different, we take the LCM.

$$\frac{13}{15}=\frac{13\times1}{15\times1}=\frac{13}{15}$$

3	15, 3
5	5, 1
	1, 1

Take the L. C. M = 3 × 5 = 15

$$\frac{4}{3}=\frac{4\times5}{3\times5}=\frac{20}{15}$$

$$\frac{13}{15}-\frac{20}{15}=\frac{13-20}{15}=\frac{7}{15}$$

k. Since,the denominators are different, we take the LCM.

$$\frac{8}{11}=\frac{8\times7}{11\times7}=\frac{56}{77}$$

7	11, 7
11	11, 1
	1, 1

Take the L. C. M = 7 × 11 = 15

$$\frac{1}{7} = \frac{1 \times 11}{7 \times 11} = \frac{11}{77}$$

$$\frac{56}{77} - \frac{11}{77} = \frac{56 - 11}{77} = \frac{45}{77}$$

k. Since,the denominators are different, we take the LCM.

$$\frac{7}{10} = \frac{7 \times 4}{10 \times 4} = \frac{28}{40}$$

2	10, 8
2	5, 4
2	5, 2
5	5, 1
	1, 1

Take the L. C. M = 2 × 2 × 2 × 5 = 40

$$\frac{1}{8} = \frac{1 \times 5}{8 \times 5} = \frac{5}{40}$$

$$\frac{28}{40} - \frac{5}{40} = \frac{28 - 5}{40} = \frac{23}{40}$$

Exercise 7 G

1.

a. $1 - \frac{7}{16} = \frac{1}{1} - \frac{7}{16}$

2	1, 16
2	1, 8
2	1, 4
2	1, 2
	1, 1

Take the L. C. M = 2 × 2 × 2 × 2 = 16

$$\frac{1}{1} = \frac{1 \times 16}{1 \times 16} = \frac{16}{16}$$

$$\frac{7}{16} = \frac{7 \times 1}{16 \times 1} = \frac{7}{16}$$

$$\frac{16}{16}-\frac{7}{16}=\frac{16-7}{16}=\frac{9}{16}$$

b. $8-\frac{5}{9}=\frac{8}{1}-\frac{5}{9}$

3	1, 9
3	1, 3
	1, 1

Take the L. C. M = 3 × 3 = 9

$$\frac{8}{1}-\frac{8\times 9}{1\times 9}=\frac{72}{9}$$

$$\frac{5}{9}=\frac{5\times 1}{9\times 1}=\frac{5}{9}$$

$$\frac{72}{9}-\frac{5}{9}=\frac{72-5}{9}=\frac{67}{9}=7\frac{4}{9}$$

c. $9-\frac{1}{6}=\frac{9}{1}-\frac{1}{6}$

2	1, 6
3	1, 3
	1, 1

Take the L. C. M = 2 × 3 = 6

$$\frac{9}{1}=\frac{9\times 6}{1\times 6}=\frac{54}{6}$$

$$\frac{1}{6}=\frac{1}{6}$$

$$\frac{54}{6}-\frac{1}{6}=\frac{54-1}{6}=\frac{53}{6}=8\frac{5}{6}$$

d. $4-\frac{3}{8}=\frac{4}{1}-\frac{3}{8}$

2	1, 8
2	1, 4
2	1, 2
	1, 1

Take the L. C. M = 2 × 2 × 2 = 8

$$\frac{4}{1}=\frac{4\times 8}{1\times 8}=\frac{32}{8}$$

$$\frac{3}{8}=\frac{3}{8}$$

$$\frac{32}{8}-\frac{3}{8}=\frac{32-3}{8}=\frac{29}{8}=3\frac{5}{8}$$

e. $4-\frac{2}{4}=\frac{4}{1}-\frac{2}{4}$

2	1, 4
2	1, 2
	1, 1

Take the L. C. M = 2 × 2 = 4

$$\frac{4}{1}=\frac{4\times4}{1\times4}=\frac{16}{4}$$

$$\frac{2}{4}=\frac{2}{4}$$

$$\frac{16}{4}-\frac{2}{4}=\frac{16-2}{4}=\frac{14}{4}=3\frac{2}{4}$$

f. $1-\frac{1}{8}=\frac{1}{1}-\frac{1}{8}$

2	1, 8
2	1, 4
2	1, 2
	1, 1

Take the L. C. M = 2 × 2 × 2 = 8

$$\frac{1}{1}-\frac{1\times8}{1\times8}=\frac{8}{8}$$

$$\frac{1}{8}=\frac{1}{8}$$

$$\frac{8}{8}-\frac{1}{8}=\frac{8-1}{8}=\frac{7}{8}$$

g. $6-3\frac{2}{3}=\frac{1}{6}-\frac{11}{3}$

3	1, 3
	1, 1

Take the L. C. M = 3 × 1 = 3

$$\frac{6}{1}=\frac{6\times3}{1\times3}=\frac{18}{3}$$

$$\frac{11}{3}=\frac{11}{3}$$

$$\frac{18}{3}-\frac{11}{3}=\frac{18-11}{3}=\frac{7}{3}=2\frac{1}{3}$$

h. $9-6\frac{2}{3}=\frac{9}{1}-\frac{20}{3}$

3	1, 3
	1, 1

Take the L. C. M = 3 × 1 = 3

$$\frac{9}{1}=\frac{9\times3}{1\times3}=\frac{27}{3}$$

$$\frac{20}{3}=\frac{20}{3}$$

$$\frac{27}{3}-\frac{20}{3}=\frac{27-20}{3}=\frac{7}{3}=2\frac{1}{3}$$

i. $7\frac{1}{2}-5=\frac{15}{2}-\frac{5}{1}$

2	2, 1
	1, 1

Take the L. C. M = 2 × 1 = 2

$$\frac{15}{2}=\frac{15}{2},\frac{5}{1}=\frac{5\times2}{1\times2}=\frac{10}{2}$$

$$\frac{15}{2}-\frac{10}{2}=\frac{15-10}{2}=\frac{5}{2}=2\frac{1}{2}$$

j. $14-8\frac{4}{5}=\frac{14}{1}-\frac{44}{5}$

5	1, 5
	1, 1

Take the L. C. M = 5 × 1 = 5

$$\frac{14}{1}=\frac{14\times5}{1\times5}=\frac{70}{5}$$

$$\frac{44}{5}=\frac{44}{5}$$

$$\frac{70}{5}-\frac{44}{5}=\frac{70-44}{5}=\frac{26}{5}=5\frac{1}{5}$$

k. $5-1\frac{3}{4}=\frac{5}{1}-\frac{7}{4}$

4	4, 1
	1, 1

Take the L. C. M = 4 × 1 = 4

$$\frac{5}{1}=\frac{5\times4}{1\times4}=\frac{20}{4}$$

$$\frac{7}{4}=\frac{7}{4}$$

$$\frac{20}{4}-\frac{7}{4}=\frac{20-7}{4}=\frac{13}{4}=3\frac{1}{4}$$

l. $8-1\frac{1}{7}=\frac{8}{1}-\frac{8}{7}$

7	7, 1
	1, 1

Take the L. C. M = 7 × 1 = 7

$$\frac{8}{1}=\frac{8\times7}{1\times7}=\frac{56}{7}$$

$$\frac{8}{7}=\frac{8}{7}$$

$$\frac{56}{7}-\frac{8}{7}=\frac{56-8}{7}=\frac{48}{7}=6\frac{6}{7}$$

2.

a. $2\frac{3}{5}-1\frac{1}{4}=\frac{13}{5}-\frac{5}{4}$

2	5, 4
2	5, 2
5	5, 1
	1, 1

Take the L. C. M = 2 × 2 × 5 = 20

$$\frac{13}{5}=\frac{13\times4}{5\times4}=\frac{52}{20}$$

$$\frac{5}{4}=\frac{5\times5}{4\times5}=\frac{25}{20}$$

$$\frac{52}{20}-\frac{25}{20}=\frac{52-25}{20}=1\frac{7}{20}$$

b. $6\frac{3}{8} - 1\frac{1}{5} = \frac{51}{8} - \frac{6}{5}$

2	8, 5
2	4, 5
2	2, 5
5	1, 5
	1, 1

Take the L. C. M = 2 × 2 × 2 × 5 = 40

$$\frac{51}{8} = \frac{51 \times 5}{8 \times 5} = \frac{255}{40}$$

$$\frac{6}{5} = \frac{6 \times 8}{5 \times 8} = \frac{48}{40}$$

$$\frac{255}{40} - \frac{48}{40} = \frac{255 - 48}{40} = \frac{207}{40}\ 5\frac{7}{40}$$

c. $5\frac{9}{11} - 2\frac{1}{5} = \frac{64}{11} - \frac{11}{5}$

5	11, 5
11	11, 5
	1, 1

Take the L. C. M = 5 × 11 = 55

$$\frac{64}{11} = \frac{64 \times 5}{11 \times 5} = \frac{320}{55}$$

$$\frac{11}{5} = \frac{11 \times 11}{5 \times 11} = \frac{121}{55}$$

$$\frac{320}{55} - \frac{121}{55} = \frac{320 - 121}{55} = \frac{199}{55} = 3\frac{34}{55}$$

d. $4\frac{7}{8} - 2\frac{1}{9} = \frac{39}{8} - \frac{19}{9}$

2	8, 9
2	4, 9
2	2, 9
3	1, 9
3	1, 3
	1, 1

Take the L. C. M = 2 × 2 × 2 × 3 × 3 = 72

$$\frac{39}{8}=\frac{39\times 9}{8\times 9}=\frac{351}{72}$$

$$\frac{19}{9}=\frac{19\times 8}{9\times 8}=\frac{152}{72}$$

$$\frac{351}{72}-\frac{152}{72}=\frac{351-152}{72}=\frac{199}{72}=2\frac{55}{72}$$

e. $4\frac{4}{7}=1\frac{1}{3}=\frac{32}{7}-\frac{4}{3}$

3	7, 3
7	7, 1
	1, 1

Take the L. C. M = 3 × 7 = 21

$$\frac{32}{7}=\frac{32\times 3}{7\times 3}=\frac{96}{21}$$

$$\frac{4}{3}=\frac{4\times 7}{3\times 7}=\frac{28}{21}$$

$$\frac{96}{21}-\frac{28}{21}=\frac{68}{21}=3\frac{5}{21}$$

f. $11\frac{1}{9}-2\frac{4}{9}=\frac{100}{9}-\frac{22}{9}$

Since, the denominator is same, we simply subtract the numerator.

$$\frac{100-22}{9}=\frac{78}{9}=\frac{26}{3}=8\frac{2}{3}$$

g. $3\frac{1}{5}=2\frac{1}{5}=\frac{16}{5}-\frac{11}{5}$

Since, the denominator is same, we simply subtract the numerator.

$$\frac{16-11}{5}=\frac{5}{5}=1$$

h. $8\frac{1}{6}-3\frac{1}{3}=\frac{49}{6}-\frac{10}{3}$

2	6, 3
3	3, 3
	1, 1

Take the L. C. M = 2 × 3 = 6

$$\frac{49}{6} = \frac{49}{6}$$

$$\frac{10}{6} - \frac{10 \times 2}{6 \times 2} = \frac{20}{6}$$

$$\frac{49}{6} - \frac{20}{6} = \frac{49 - 20}{6} = \frac{29}{6} = 4\frac{5}{6}$$

i. $3\frac{3}{5} - 2\frac{1}{4} = \frac{18}{5} - \frac{9}{4}$

2	5, 4
2	5, 2
5	5, 1
	1, 1

Take the L. C. M = 2 × 2 × 5 = 20

$$\frac{18}{5} = \frac{18 \times 4}{5 \times 4} = \frac{72}{20}$$

$$\frac{9}{4} = \frac{9 \times 5}{4 \times 5} = \frac{45}{20}$$

$$\frac{72}{20} - \frac{45}{20} = \frac{72 - 45}{20} = \frac{27}{20} = 1\frac{7}{20}$$

j. $12\frac{3}{7} - 6\frac{1}{2} = \frac{87}{7} - \frac{13}{2}$

3	7, 3
7	7, 1
	1, 1

Take the L. C. M = 3 × 7 = 21

$$\frac{87}{7} = \frac{87 \times 2}{7 \times 2} = \frac{174}{14}$$

$$\frac{13}{2} = \frac{13 \times 7}{2 \times 7} = \frac{91}{14}$$

$$\frac{174}{14} - \frac{91}{14} = \frac{174 - 91}{14} = \frac{83}{14} = 5\frac{13}{14}$$

k. $5 - 1\frac{3}{4} = \frac{5}{1} - \frac{7}{4}$

2	1, 4
2	1, 2
	1, 1

Take the L. C. M = 2 × 2 = 4

$$\frac{5}{1}=\frac{5\times4}{1\times4}=\frac{20}{4}$$

$$\frac{7}{4}=\frac{7\times1}{4\times1}=\frac{7}{4}$$

$$\frac{20}{4}-\frac{7}{4}=\frac{20-7}{4}=\frac{13}{4}=3\frac{1}{4}$$

l. $3\frac{1}{2}-\frac{3}{4}=\frac{7}{2}-\frac{3}{4}$

2	2, 4
2	1, 2
	1, 1

Take the L. C. M = 2 × 2 = 4

$$\frac{7}{2}=\frac{7\times2}{2\times2}=\frac{14}{4}$$

$$\frac{3}{4}=\frac{3}{4}$$

$$\frac{14}{4}-\frac{3}{4}=\frac{14-3}{4}=\frac{11}{4}=2\frac{3}{4}$$

Exercise 7 H

1.

a. $3\frac{1}{3}+4\frac{1}{4}-3\frac{1}{3}=\frac{10}{3}+\frac{17}{4}-\frac{10}{3}$

2	3, 4, 3
2	3, 2, 3
3	3, 1, 3
	1, 1, 1

Take the L. C. M = 2 × 2 × 3 = 36

$$\frac{10}{3}=\frac{10\times12}{3\times12}=\frac{120}{36}$$

$$\frac{17}{4}=\frac{17\times9}{4\times9}=\frac{153}{36}$$

$$\frac{10}{3}=\frac{120}{36}$$

$$\frac{120}{36}+\frac{153}{36}-\frac{120+153-120}{36}=\frac{153}{36}=4\frac{1}{4}-$$

b. $4\frac{1}{8}+5\frac{1}{4}-4\frac{3}{4}=\frac{33}{8}+\frac{21}{4}-\frac{19}{3}$

2	4, 4, 8
2	2, 2, 4
2	1, 1, 2
	1, 1, 1

Take the L. C. M = 2 × 2 × 2 = 8

$$\frac{33}{8}=\frac{33}{8}$$

$$\frac{21}{4}=\frac{21\times2}{4\times2}=\frac{42}{8}$$

$$\frac{19}{4}=\frac{19\times2}{4\times2}=\frac{38}{8}$$

$$\frac{33}{8}+\frac{42}{8}-\frac{38}{8}=\frac{33+42-38}{8}=\frac{37}{8}\,4\frac{5}{8}$$

c. $6\frac{1}{7}+2\frac{1}{7}-2\frac{1}{5}=\frac{43}{7}+\frac{15}{7}=\frac{11}{5}$

5	5, 7, 7
7	1, 7, 7
	1, 1, 1

Take the L. C. M = 5 × 7 = 35

$$\frac{43}{7}=\frac{43\times5}{7\times5}=\frac{215}{35}$$

$$\frac{15}{7}=\frac{15\times5}{7\times5}=\frac{75}{35}$$

$$\frac{11}{5}=\frac{11\times7}{5\times7}=\frac{77}{35}$$

$$\frac{215}{35}+\frac{75}{35}-\frac{77}{35}=\frac{215+75-77}{35}=\frac{231}{35}=6\frac{3}{35}$$

d. $4\frac{3}{5}+2\frac{1}{15}-2\frac{1}{3}=\frac{23}{5}+\frac{31}{15}-\frac{7}{3}$

3	5, 15, 3
5	5, 5, 3
	1, 1, 1

Take the L. C. M = 3 × 5 = 15

$$\frac{23}{5}=\frac{23\times 3}{5\times 3}=\frac{69}{15}$$

$$\frac{31}{15}=\frac{31\times 1}{15\times 1}=\frac{31}{15}$$

$$\frac{7}{3}=\frac{7\times 5}{3\times 5}=\frac{35}{15}$$

$$\frac{69}{15}+\frac{31}{15}-\frac{35}{15}=\frac{69+31-35}{15}=\frac{65}{15}=4\frac{1}{3}$$

e. $5\frac{3}{11}+4-2\frac{1}{22}=\frac{58}{11}+\frac{4}{1}-\frac{45}{22}$

2	11, 1, 22
11	11, 1, 11
	1, 1, 1

Take the L. C. M = 2 × 11 = 22

$$\frac{58}{11}=\frac{58\times 2}{11\times 2}=\frac{116}{22}$$

$$\frac{4}{1}=\frac{4\times 22}{1\times 22}=\frac{88}{22}$$

$$\frac{45}{22}=\frac{45}{22}$$

$$\frac{116}{22}+\frac{88}{22}-\frac{45}{22}=\frac{116+88-45}{22}=7\frac{5}{22}$$

f. $7\frac{1}{4}+3\frac{3}{4}-2\frac{1}{2}=\frac{29}{4}+\frac{15}{4}-\frac{5}{2}$

2	4, 4, 2
2	2, 2, 1
	1, 1, 1

Take the L. C. M = 2 × 2 = 4

$$\frac{29}{4},\frac{15}{4},\frac{5}{2}=\frac{5\times 2}{2\times 2}=\frac{10}{4}$$

$$\frac{29}{4}+\frac{15}{4}-\frac{10}{4}=\frac{29+15-10}{4}=\frac{34}{4}=8\frac{1}{2}$$

g. $17\frac{1}{4}+1\frac{1}{3}-2\frac{1}{2}=\frac{69}{4}+\frac{4}{3}-\frac{5}{2}$

2	4, 3, 2
2	2, 3, 1
3	1, 3, 1
	1, 1, 1

Take the L. C. M = 2 × 2 × 3 = 12

$$\frac{69}{4} = \frac{69 \times 3}{4 \times 3} = \frac{207}{12}$$

$$\frac{4}{3} = \frac{4 \times 4}{3 \times 4} = \frac{16}{12}$$

$$\frac{5}{2} = \frac{5 \times 6}{2 \times 6} = \frac{30}{12}$$

$$\frac{207}{12} + \frac{16}{12} - \frac{30}{12} = \frac{207 + 16 - 30}{12} = \frac{193}{12} = 16\frac{1}{12}$$

h. $5\frac{2}{3} + \frac{6}{7} + 4 = \frac{17}{3} + \frac{6}{7} + \frac{4}{1}$

3	3, 7, 1
7	1, 7, 1
	1, 1, 1

Take the L. C. M = 3 × 7 = 31

$$\frac{17}{3} = \frac{17 \times 7}{3 \times 7} = \frac{119}{21}$$

$$\frac{6}{7} = \frac{6 \times 3}{7 \times 3} = \frac{18}{21}$$

$$\frac{4}{1} = \frac{4 \times 21}{1 \times 21} = \frac{84}{21}$$

$$\frac{119}{21} + \frac{18}{21} + \frac{84}{21} = \frac{221}{21} = 10\frac{11}{21}$$

i. $8\frac{1}{3} + 6\frac{2}{5} - \frac{1}{3} = \frac{25}{3} + \frac{32}{5} - \frac{1}{3}$

3	3, 5, 3
5	1, 5, 1
	1, 1, 1

Take the L. C. M = 3 × 5 = 15

$$\frac{25}{3} = \frac{25 \times 5}{3 \times 5} = \frac{125}{15}$$

$$\frac{32}{5} = \frac{32 \times 3}{5 \times 3} = \frac{96}{15}$$

$$\frac{1}{3} = \frac{1 \times 5}{3 \times 5} = \frac{5}{15}$$

$$\frac{125}{15} + \frac{96}{15} - \frac{5}{15} = \frac{125 + 96 - 5}{15} = \frac{217}{15} = 14\frac{2}{5}$$

Exercise 7 I

1.

a. $\frac{3}{4} \times \frac{2}{1} = \frac{6}{4} = \frac{3}{2} = 1\frac{1}{2}$

b. $\frac{9}{4} \times \frac{16}{1} = \frac{144}{4} = 36$

c. $\frac{7}{6} \times \frac{12}{1} = \frac{84}{6} = 14$

d. $\frac{6}{7} \times \frac{24}{1} = \frac{144}{7} = 20\frac{4}{7}$

e. $\frac{20}{1} \times \frac{3}{1} = \frac{60}{4} = 15$

f. $3\frac{1}{2} \times 5 = \frac{7}{2} \times \frac{5}{1} = \frac{35}{2} 17\frac{1}{2}$

g. $5\frac{1}{7} \times 4 = \frac{36}{7} \times \frac{4}{1} = \frac{144}{7} = 20\frac{4}{7}$

h. $8\frac{1}{8} \times \frac{3}{1} = \frac{17}{2} \times \frac{3}{1} = \frac{51}{2} = 25\frac{1}{2}$

i. $\frac{9}{13} \times \frac{3}{1} = \frac{27}{13} = 2\frac{1}{13}$

j. $9\frac{1}{3} \times 21 = \frac{28}{3} \times \frac{21}{1} = \frac{588}{3} = 196$

k. $\frac{20}{19} \times \frac{76}{1} = \frac{520}{19} = 80$

l. $2\frac{3}{4} \times 98 = \frac{11}{4} \times \frac{98}{1} = \frac{1078}{4} = 269\frac{1}{2} -$

m. $\frac{7}{17} \times 51 = \frac{357}{17} = 21$

n. $8\frac{1}{4} \times 4 = \frac{33}{4} \times \frac{4}{1} = \frac{132}{4} = 33$

o. $\frac{5}{9} \times 15 = \frac{75}{9} = \frac{25}{3} = 8\frac{1}{3}$

p. $4\frac{1}{5}\times 12=\frac{21}{5}\times\frac{12}{1}=\frac{252}{5}=50\frac{2}{5}$

Exercise 7 J

1.

a. $\frac{3}{5}\times\frac{5}{7}=\frac{15}{35}=\frac{3}{7}$

b. $\frac{5}{6}\times\frac{9}{10}=\frac{45}{60}=\frac{3}{4}$

c. $\frac{14}{27}\times\frac{12}{35}=\frac{168}{945}=\frac{8}{45}$

d. $\frac{8}{10}\times\frac{10}{19}=\frac{80}{190}=\frac{8}{19}$

e. $3\frac{1}{4}\times 2\frac{1}{6}=\frac{13}{4}\times\frac{13}{6}=\frac{169}{24}=7\frac{1}{24}$

f. $3\frac{2}{5}\times\frac{10}{15}=\frac{17}{5}\times\frac{10}{15}=\frac{170}{75}=\frac{34}{15}=2\frac{4}{15}$

g. $2\frac{1}{5}\times\frac{7}{9}=\frac{11}{5}\times\frac{7}{9}=\frac{77}{45}=1\frac{32}{45}$

h. $9\frac{2}{3}\times 1\frac{1}{3}=\frac{29}{3}\times\frac{4}{3}=\frac{116}{9}=12\frac{8}{9}$

i. $5\frac{1}{3}\times 6\frac{7}{8}=\frac{16}{3}\times\frac{55}{8}=\frac{880}{24}=\frac{110}{3}=36\frac{2}{3}$

j. $\frac{10}{27}\times\frac{30}{50}=\frac{300}{1350}=\frac{60}{270}=\frac{2}{9}$

k. $\frac{12}{40}\times\frac{40}{42}=\frac{480}{1680}=\frac{2}{7}$

l. $\frac{9}{10}\times\frac{45}{60}=\frac{405}{600}=\frac{27}{40}$

m. $4\frac{9}{13}\times 2\frac{13}{17}=\frac{61}{13}\times\frac{47}{17}=\frac{2867}{221}=12\frac{215}{221}$

n. $8\frac{2}{3}\times 3\frac{9}{10}=\frac{26}{3}\times\frac{39}{10}=\frac{1014}{30}=\frac{169}{5}=33\frac{4}{5}$

o. $4\frac{4}{9}\times 5\frac{3}{4}=\frac{40}{9}\times\frac{23}{4}=\frac{920}{36}=\frac{230}{9}=22\frac{5}{9}$

p. $1\frac{4}{3}\times 3\frac{3}{4}=\frac{7}{3}\times\frac{15}{4}=\frac{105}{12}=8\frac{3}{4}$

q. $2\frac{7}{8}\times 1\frac{1}{8}=\frac{23}{8}\times\frac{9}{8}=\frac{207}{64}=3\frac{15}{64}$

r. $1\frac{1}{2} \times 2\frac{1}{4} = \frac{3}{2} \times \frac{9}{4} = \frac{27}{8} = 3\frac{3}{8}$

Word Problems

1. A cow gives milk = $12\frac{3}{5}$ l

   His master use * part of milk.

   He uses milk daily = $12\frac{3}{5} \times \frac{1}{2}$ l

   $= \frac{63}{5} \times \frac{1}{2}$ l

   $= \frac{63}{10}$ l

   $= 6\frac{3}{10}$ l

2. Cost of ribbon = r $5\frac{1}{4}$

   Cost of a ribbons = r $5\frac{1}{4} \times 9$

   r $\frac{21}{4} \times \frac{9}{1}$

   r $\frac{189}{4}$

   r $47\frac{1}{4}$

3. Cost of 1 litre milk = r $16\frac{1}{7}$

   Cost of $7\frac{1}{4}$ l milk =r $16\frac{1}{7} \times 7\frac{1}{4}$

   r $\frac{113}{7} \times \frac{29}{4}$

   r $\frac{3277}{28}$

   r $117\frac{1}{28}$

4. Number of apples in a box = 50

Part of rotten apple = $\frac{2}{5}$

Number of rotten apples = $\frac{2}{5} \times \frac{50}{1}$

$\frac{100}{5}$ 20 Apples.

5. The total weight of cake = $1\frac{1}{2}$

Anwar ate $\frac{2}{3}$ part of the cake

So, Anwar ate = $1\frac{1}{2} \times \frac{2}{3}$ kg

$\frac{3}{2} \times \frac{2}{3}$ kg

$\frac{6}{6}$ kg = 1 kg

6. A milk bottle contains milk = $1\frac{1}{4}$ l

24 milk bottle contains milk = $1\frac{1}{4} \times 24$ l

$\frac{5}{4} \times \frac{24}{1}$ *l*

$\frac{120}{4}$ *l*

30 *l*

7. Number of Total books = 80

$\frac{3}{5}$ part were story books.

Number of story books = $\frac{3}{5} \times \frac{80}{1}$

$\frac{240}{5}$ = 48 story books.

8. $3\frac{7}{8} \times 11\frac{2}{3} = \frac{31}{8} \times \frac{35}{3} = \frac{1085}{24} = 45\frac{5}{24}$

Exercise 7 K

1. -

a. Reciprocal of 3 = $\frac{1}{3}$

b. Reciprocal of 7 = $\frac{1}{7}$

c. Reciprocal of 8 = $\frac{1}{8}$

d. Reciprocal of 14 = $\frac{1}{14}$

e. Reciprocal of = $\frac{1}{4}$ = 14

f. Reciprocal of $\frac{7}{13} = \frac{13}{7} = 1\frac{6}{7}$

g. Reciprocal of $\frac{2}{5} = \frac{5}{2} = 2\frac{1}{2}$

h. Reciprocal of $\frac{5}{13} = \frac{13}{5} = 2\frac{3}{5}$

i. Reciprocal of $\frac{21}{23} = \frac{23}{21} = 1\frac{2}{21}$

j. Reciprocal of $\frac{17}{16} = \frac{16}{7}$

k. Reciprocal of $\frac{15}{19} = \frac{19}{15} = 1\frac{4}{15}$

l. Reciprocal of $\frac{21}{37} = \frac{37}{21} = 1\frac{16}{21}$

m. Reciprocal of $\frac{39}{35} = \frac{35}{39}$

n. Reciprocal of $6\frac{2}{5}$ or $\frac{32}{5} = \frac{5}{32}$

o. Reciprocal of $9\frac{1}{9}$ or $\frac{82}{9} = \frac{9}{82}$

p. Reciprocal of $7\frac{4}{5}$ or $\frac{39}{5} = \frac{5}{39}$

q. Reciprocal of $16\frac{5}{7}$ or $\frac{117}{7} = \frac{7}{117}$

r. Reciprocal of $18\frac{1}{3}$ or $\frac{55}{3} = \frac{3}{55}$

Exercise 7 L

1.

a. $\frac{5}{8} \div \frac{2}{1} = \frac{5}{8} \times \frac{1}{2} = \frac{5}{16}$

b. $\frac{8}{9} \div \frac{14}{1} = \frac{8}{9} \times \frac{1}{14} = \frac{8}{126} = \frac{4}{63}$

c. $\frac{1}{6} \div \frac{4}{1} = \frac{1}{6} \times \frac{1}{4} = \frac{1}{24}$

d. $\frac{7}{5} \div \frac{16}{1} = \frac{7}{5} \times \frac{1}{16} = \frac{7}{80}$

e. $\frac{4}{11} \div \frac{28}{1} = \frac{4}{11} \times \frac{1}{28} = \frac{4}{308} = \frac{1}{77}$

f. $\frac{4}{9} \div \frac{6}{1} = \frac{4}{9} \times \frac{1}{6} = \frac{4}{54} = \frac{2}{27}$

g. $1\frac{2}{3} \div \frac{12}{1} = \frac{5}{3} \times \frac{1}{12} = \frac{5}{36}$

h. $\frac{11}{30} \div \frac{154}{1} = \frac{11}{30} \times \frac{1}{154} = \frac{11}{4620} = \frac{1}{420}$

i. $\frac{5}{16} \div \frac{4}{1} = \frac{5}{16} \times \frac{1}{4} = \frac{5}{64}$

Exercise 7 M

1.

a. $\frac{3}{16} \div 18\frac{3}{8} = \frac{3}{16} \div \frac{147}{8} = \frac{3}{16} \times \frac{8}{147} = \frac{24}{2352} = \frac{1}{98}$

b. $5\frac{5}{12} \div \frac{5}{16} = \frac{65}{12} \times \frac{16}{5} = \frac{1040}{60} = 17\frac{1}{3}$

c. $\frac{8}{15} \div \frac{5}{2} = \frac{8}{15} \times \frac{2}{5} = \frac{16}{75}$

d. $\frac{2}{5} \div \frac{8}{5} = \frac{2}{8} \times \frac{5}{5} = \frac{10}{14} = \frac{1}{4}$

e. $10\frac{3}{8} \div \frac{5}{36} 5 = \frac{83}{8} \times \frac{36}{5} = \frac{2988}{40} = 74\frac{7}{10}$

f. $\frac{10}{33} \div 2\frac{8}{11} = \frac{10}{33} \div \frac{30}{11} = \frac{10}{33} \times \frac{11}{30} = \frac{110}{990} = \frac{1}{9}$

g. $\frac{9}{11} \div \frac{88}{121} = \frac{9}{11} \times \frac{121}{88} = \frac{1089}{968} 1\frac{1}{8}$

h. $\frac{9}{26} \div \frac{36}{52} = \frac{9}{26} \times \frac{52}{36} = \frac{468}{936} = \frac{1}{2}$

i. $\frac{12}{11} \div \frac{12}{11} = \frac{12}{11} \times \frac{11}{12} = \frac{121}{121} = 1$

j. $\frac{13}{15} \div 1\frac{8}{5} = \frac{13}{15} \div \frac{13}{5} = \frac{13}{15} \times \frac{5}{13} = \frac{65}{195} = \frac{1}{3}$

k. $\frac{18}{21} \div \frac{12}{35} = \frac{18}{21} \times \frac{35}{12} = \frac{630}{252} = 2\frac{1}{2}$

l. $\frac{16}{20} \div 1\frac{1}{5} = \frac{16}{20} \div \frac{6}{5} = \frac{16}{20} \times \frac{5}{6} = \frac{80}{120} = \frac{2}{3}$

2.

a. $1\frac{5}{7} \div 2\frac{3}{5} = \frac{12}{7} \div \frac{13}{5} = \frac{12}{7} \times \frac{5}{13} = \frac{60}{91}$

b. $4\frac{3}{4} \div 5\frac{3}{4} = \frac{19}{4} \div \frac{23}{4} = \frac{19}{4} \times \frac{4}{32} = \frac{19}{23}$

c. $2\frac{1}{4} \div 2\frac{1}{2} = \frac{9}{4} \div \frac{5}{2} = \frac{9}{4} \times \frac{2}{5} = \frac{18}{20} = \frac{9}{10}$

d. $4\frac{3}{4} \div 2\frac{1}{3} = \frac{19}{4} \div \frac{7}{3} = \frac{19}{4} \times \frac{3}{7} = \frac{57}{28} = 2\frac{1}{28}$

e. $4\frac{1}{2} \div 2\frac{1}{2} = \frac{9}{2} \div \frac{5}{2} = \frac{9}{2} \times \frac{2}{5} = \frac{18}{10} = 1\frac{4}{5}$

f. $3\frac{3}{91} \div 3\frac{2}{91} = \frac{276}{91} \div \frac{275}{91} = \frac{276}{91} \times \frac{91}{275} = \frac{276}{275} = 1\frac{1}{275}$

g. $5\frac{3}{8} \div 3\frac{1}{2} = \frac{43}{8} \div \frac{7}{2} = \frac{43}{8} \times \frac{2}{7} = \frac{86}{56} = 1\frac{15}{28}$

h. $2\frac{8}{11} \div 4\frac{1}{11} = \frac{30}{11} \div \frac{45}{11} = \frac{30}{11} \times \frac{11}{45} = \frac{330}{495} = \frac{2}{3}$

i. $2\frac{3}{5} \div 3\frac{4}{9} = \frac{13}{5} \div \frac{31}{9} = \frac{13}{5} \times \frac{9}{31} = \frac{117}{155}$

j. $8\frac{2}{5} \div 6\frac{1}{2} = \frac{42}{5} \div \frac{13}{2} = \frac{42}{5} \times \frac{2}{13} = \frac{84}{65} = 1\frac{19}{65}$

k. $7\frac{1}{4} \div 5\frac{1}{5} = \frac{29}{4} \div \frac{26}{5} = \frac{29}{4} \times \frac{5}{26} = \frac{145}{104} = 1\frac{41}{104}$

l. $2\frac{2}{7} \div 2\frac{1}{7} = \frac{16}{7} \div \frac{15}{7} = \frac{16}{7} \times \frac{7}{15} = \frac{112}{105} = \frac{16}{15} 1\frac{1}{15}$

Exercise

1.

a. $18\frac{1}{4} + 22\frac{1}{2} - 12\frac{1}{2}$

$= \frac{73}{4} + \frac{45}{2} - \frac{25}{2}$

$= \frac{73 + 90 - 50}{4}$

$= \frac{113}{4} = 28\frac{1}{4}$

$28\frac{1}{4}$ Subtracted from the sum of $18\frac{1}{4}$ and $22\frac{1}{2}$ to get $12\frac{1}{2}$

b. Weight of two books = $3\frac{1}{4}$ kg

Weight of one books = $1\frac{1}{2}$ kg

Weight of other book = $3\frac{1}{4} - 1\frac{1}{2}$ kg

$= \frac{13}{4} - \frac{3}{2}$ kg

$= \frac{13 - 6}{4}$ kg $= \frac{7}{4}$ kg

$= 1\frac{3}{4}$ kg

c. Sum of the sides of a triangle = $15\frac{2}{9}$ cm

Two sides are $6\frac{1}{5}$ cm and $2\frac{5}{7}$ cm

Third side of triangle = $6\frac{1}{5} + 2\frac{5}{7} - 15\frac{2}{9}$

$= \frac{31}{5} + \frac{19}{7} - \frac{137}{9}$

$$= \frac{1931 + 855 - 4795}{315}$$

$$= \frac{1987}{315}$$

$$= 6\frac{97}{315}$$

d. Sum of $5\frac{3}{5}$ and $6\frac{4}{9}$

$$= \frac{28}{5} + \frac{58}{9}$$

3	9, 5
3	3, 5
5	1, 5
	1, 1, 1

Take the L.C.M = 3 × 3 × 5 = 45

$$= \frac{28}{5} = \frac{28 \times 9}{5 \times 9} = \frac{252}{45}$$

$$= \frac{58}{9} = \frac{58 \times 5}{9 \times 5} = \frac{290}{45}$$

$$\frac{252}{45} + \frac{290}{45} = \frac{252 + 290}{45} = \frac{542}{45}$$

Sum of $8\frac{1}{7}$ and $7\frac{4}{7}$

$$= \frac{57}{7} + \frac{53}{7}$$

Denominators are same So, we simply add the numerators.

$$\frac{57 + 53}{7} = \frac{110}{7}$$

Now we subtract both sums.

3	45, 7
3	15, 7
5	5, 7
7	1, 7
	1, 1, 1

Take the L.C.M = 3 × 3 × 5 × 7 = 315

$$\frac{110}{7} = \frac{542}{45}$$

$$\frac{4950 - 3794}{315} = \frac{1156}{315}$$

$$3\frac{211}{315}$$

e. Length of electricity pole = $12\frac{1}{5}$ m

Length of electricity pole under the ground = $4\frac{1}{3}$ m

Length of electricity pole above the ground = $12\frac{1}{5} - 4\frac{1}{3}$ m

$= \frac{61}{5} - \frac{13}{3}$ m

$= \frac{183 - 65}{15}$ m

$= \frac{118}{15}$ m $= 7\frac{13}{15}$ m

f. $3\frac{7}{5}$ and $6\frac{1}{5}$

$$\frac{22}{5} + \frac{13}{5}$$

$$\frac{22 + 31}{5} = \frac{53}{5}$$

$$\frac{22 + 31}{5} = \frac{53}{5}$$

$1\frac{1}{5}$ and $1\frac{2}{5}$

$$\frac{6}{5} + \frac{7}{5}$$

$$\frac{6 + 7}{5} = \frac{13}{5}$$

Subtract second sum from first.

$$\frac{53}{5} - \frac{13}{5} = \frac{53 - 13}{5} = \frac{40}{5} = 8$$

g. A gas tanker contained 70 kg of gas.

Used gas = $44\ \frac{3}{4}$ kg

Left gas = $\frac{70}{1} - 44\frac{3}{4}$ kg

$= \frac{70}{1} - \frac{179}{4}$ kg

$= \frac{280 - 179}{4}$ kg

$= \frac{101}{4}$ kg $= 25\frac{1}{4}$ kg

h. 1 rupee = 100 paise.

$\frac{1}{5} \times \frac{100}{1}$ = 20 paise

i. 1 year = 365 days

$\frac{3}{5} \times \frac{365}{1} = \frac{1095}{5}$

219 days

j. 1 week = 7 days

$\frac{3}{7} \times \frac{7}{1}$ 3 days

k. 1 litre 1000 ml

$\frac{1}{4} \times \frac{1000}{1} = \frac{1000}{4} = 250$ ml

l. 1 dozens = 12 , 2 dozens = 2 × 12 = 24

$\frac{7}{8} \times \frac{24}{1} = \frac{168}{8} = 21$

m. $\frac{3}{5} \times 365 = 219$ days

n. $4\frac{2}{11} \div \frac{8}{11} = \frac{46}{11} \div \frac{8}{11}$

$\frac{46}{11} \div \frac{11}{8} = \frac{506}{88} = \frac{23}{4} = 5\frac{3}{4}$

o. $\frac{36}{1} \div 7\frac{1}{5} = \frac{36}{1} \div \frac{36}{5} = \frac{36}{1} \times \frac{5}{36} = 5$

p. Bag contains of sugar = 88 kg.

$\frac{6}{16}$ part is empty

Sugar is in the bags = $\frac{88}{1} \times \frac{6}{16}$ kg

$\frac{528}{16} = 33$ kg

q. Capacity of a parking lot = 360 cars.

$\frac{5}{8}$ part of parking lot is full.

No. of cars in parking lot = $360 \times \frac{5}{8}$

= $\frac{1800}{8} = 225$ cars.

r. Total length of cloth = 54 metres.

1 peace of cloth = $3\frac{3}{8}$ metres.

Total numbers of pieces of cloth = $54 \div 3\frac{3}{8}$ pieces.

= $\frac{54}{1} \div \frac{27}{8}$ pieces

= $\frac{54}{1} \times \frac{8}{27} = \frac{432}{27} = 16$ pieces

s. Product of two number = $7\frac{1}{4}$

first number = $9\frac{1}{4}$

second number = $7\frac{1}{4} \div 9\frac{1}{4}$

= $\frac{29}{4} \div \frac{37}{4} = \frac{29}{4} \times \frac{4}{37} = \frac{29}{37}$

t. Cost of $4\frac{3}{2}$ kg rice = $170\frac{1}{2}$

Cost of 1 kg rice = $170\frac{1}{2} \div 4\frac{3}{2}$

= $\frac{341}{2} \div \frac{11}{2}$

$= \frac{341}{2} \times \frac{2}{11} = \frac{334}{11} = 31$

Cost of 2 kg rice = 31 × 2 = 62

u. Fee of a student = $1\frac{1}{4}$

The amount collected = 125

Number of student = $\frac{125}{1} \div 1\frac{1}{4}$

$= \frac{125}{1} \div \frac{5}{4} = \frac{125}{1} \times \frac{4}{5} = 100$ students.

v. Length of a rope = $6\frac{1}{4}$ m

Cut into 4 equal parts

Length of each part $6\frac{1}{4} \div \frac{4}{1}$

$= \frac{25}{4} \div \frac{4}{1} = \frac{25}{4} \times \frac{1}{4}$

$= \frac{25}{16} = 1\frac{9}{16}$

w. Cost of $2\frac{1}{5}$ kg Sugar $130\frac{1}{5}$

Cost if 1 kg sugar = $130\frac{1}{5} \div 2\frac{1}{5}$

$= \frac{651}{5} \div \frac{11}{5} = \frac{651}{5} \times \frac{5}{11}$

$= \frac{651}{11} = 59\frac{2}{11}$

HOTS

1. The unit fraction 1/8 will be added 8 times to get 1.
2. The reciprocal of a/an 2 unit fraction cannot be subtracted from the fraction itself.

Mental Maths

1. Unit fractions are always in their lowest terms.
2. The only number which has the same reciprocal as itself is 1 .

3. The reciprocal of an improper fraction is always a/an proper fraction
4. The reciprocal of reciprocal of a fraction gives the fraction itself.
5. Unit fractions can be compared justs by looking at their denominators
6. $\frac{48}{90}$ in the lowest form is $\frac{8}{15}$.
7. $\frac{8}{10}$ and $\frac{40}{50}$ are equivalent fractions.
8. find the fraction which is exactly halfway between $\frac{1}{15}$ and $\frac{1}{12}$ $\frac{3}{40}$
9. The product of $2\frac{4}{9}$ and $5\frac{3}{4}$ is $\frac{253}{18} = 14\frac{1}{18}$
10. What fraction of 1 kg is 50 g ? $\frac{1}{20}$
11. The numerator is always less than the denominator in a proper fraction.
12. $3\frac{1}{10} \times 2\frac{5}{6} \times 1\frac{1}{2} = 13\frac{7}{40}$
13. $\frac{4}{7} \div \frac{16}{35} = 1\frac{1}{4}$
14. When a fraction is multiplied by 0, the product is 0

Chapter
8

XXX

Exercise 8 A

1. Write the following decimals in numeric form.

a. Four point one five — 4.15

b. Zero point four six five — 0.465

c. Eleven point eight seven eight — 11.878

d. Four hundred fifty-four point nine — 454.9

e. Twelve point six five five — 12.655

f. Sixteen point two three — 16.23

2. Name the following decimal numbers.

a. 12.3 — Twelve point three

b. 99.1 — Ninety nine point one

c. 0.159 — Zero point one five nine

d. 11.97 — Eleven point nine seven

e. 26.184 — Twenty six pint one eight four

f. 214.898 — Two hundred fourteen point eight nine eight

3. Write two equivalent decimals for the following numbers.

a.	6.1	6.10	6.100
b.	1.92	1.920	1.9200
c.	15.36	15.360	15.3600
d.	37.88	37.880	37.8800
e.	49.9	49.90	49.900
f.	41.2	41.20	41.200

4.

a. Fractional form = $50 + 9 + \frac{6}{10} + \frac{2}{100}$

Decimal form = 50 + 9 + 0.6 + 0.02

Place value form = 5 tens, + 9 ones + 6 tenths + 9 hundredths

b. Place value form = 1 hundredths + 4 tens, + 9 ones + 7 tenths + 9 hundredths.

Decimal form = 100 + 40 + 9 + 0.7 + 0.09

Fractional form = $100 + 40 + 9 + \frac{7}{10} + \frac{9}{100}$

c. Place value form = 1 hundredths + 6 tens, + 2 ones + 9 tenths 4 hundredths 1 thousandths.

Decimal form = 100 + 60 + 2 + 0.9 + 0.04 + 0.001

Fractional form = $100 + 60 + 2 + \frac{9}{10} + \frac{4}{100} + \frac{1}{1000}$

d. Place value form = 0 ones + 1 tenths + 4 hundredths + 6 hundredths + 5 ten thousandths.

Decimal form = 0 + 0.1 + 0.04 + 0.006 + 0.0005

Fractional form = $0 + \frac{1}{10} + \frac{1}{400} + \frac{1}{6000} + \frac{1}{50000}$

e. Place value form = 4 hundredths + 9 hundreds + 4 tens + 9 ones

+ tenths + 7 hundredths + 8 thousandths + ten thousandth.

Decimal form = 4000 + 400 + 40 + 9 + 0.1 + 0.07 + 0.008 + 0.0002

Fractional form = $4000 + 900 + 40 + 9 + \frac{1}{10} + \frac{7}{100} + \frac{8}{1000} + \frac{2}{1000}$

f. Place value form = 8 tens + 7 ones + 5 tenths + 6 hundredths + 1 thousands.

Decimal form = 80 + 7 + 0.5 + 0.06 + 0.001

Fractional form = $80 + 7 + \frac{5}{10} + \frac{6}{100} + \frac{1}{1000}$

5.

a. 14.3, 8.14, 7.195

Maximum no. of decimal places = 3

Convert each decimal number to 3 decimal places by adding zeros.

14.300, 8.140, 7.195

b. 93.419, 184.3, 413.23

Maximum no. of decimal places = 3

Convert each decimal number to 3 decimal places by adding zeros.

93.419, 184.300, 413.230

c. 1.1, 0.01, 10.6, 101.1

Maximum no. of decimal places = 2

Convert each decimal number to 2 decimal places by adding zeros.

1.10, 0.01, 10.60, 101.10

d. 27.1, 0.652, 7.04, 116.3, 67.39

Maximum no. of decimal places = 3

Convert each decimal number to 3 decimal places by adding zeros.

27.100, 0.652, 7.040, 116.300, 67.390

e. 39.121, 49, 119.9, 9.09

Maximum no. of decimal places = 3

Convert each decimal number to 3 decimal places by adding zeros.

39.121, 49.000, 119.900, 9.090

f. 0.333, 127.01, 69.4

Maximum no. of decimal places = 3

Convert each decimal number to 3 decimal places by adding zeros.

0.333, 127.010, 69.400

Exercise 8 B

1.

a. $0.3 = \frac{3}{10}$

b. $0.35 = \frac{35}{100}$

c. $4.8 = \frac{48}{10}$

d. $2.75 = \frac{275}{100}$

e. $6.05 = \frac{605}{100}$

f. $16.25 = \frac{1625}{100}$

g. $4.44 = \frac{444}{100}$

h. $70.625 = \frac{70625}{1000}$

i. $65.75 = \frac{6575}{100}$

j. $24.015 = \frac{24015}{1000}$

2.

a. $\frac{19}{10} = 1.9$

b. $\frac{1057}{1000} = 1.057$

c. $\frac{19035}{1000} = 19.035$

d. $\frac{2}{5} = 0.4$

e. $\frac{15}{20} = 0.75$ **f.** $4\frac{5}{8} = \frac{37}{8} = 4.625$

g. $6\frac{2}{3} = \frac{20}{3} = 6.666$ **h.** $9\frac{2}{25} = \frac{227}{25} = 9.8$

i. $\frac{37}{40} = 0.925$ **j.** $\frac{347}{500} = 0.694$

k. $4\frac{5}{8} = \frac{37}{8} = 4.625$ **l.** $6\frac{3}{20} = \frac{123}{20} = 6.15$

m. $9\frac{6}{25} = \frac{231}{25} = 9.24$ **n.** $\frac{37}{40} = 0.925$

o. $\frac{347}{500} = 0.694$

3.

a. 1.9 > 1.89 **b.** 33.99 < 33.999

c. 444.98 > 44.999 **d.** 13.333 > 1.33333

e. 20.90 > 20.899 **f.** 8.19 < 18.19

g. 18.89 > 17.98 **h.** 2.09 < 2.90

2. **a.** unlike decimals : 1.1 1.01 0.11 1.11

Like decimals: 1.10 1.01 0.11 1.11

whole numbers : 110 101 11 111

Ascending order : 11 < 101 < 101 < 111

0.11 < 1.01 < 1.1 < 1.11

b. Unlike decimals: 2.04 2.4 2.24 2.1

Like decimals: 2.04 2.40 2.24 2.10

Whole numbers : 204 240 224 210

Ascending order: 204 < 210 < 224 < 240

2.04 < 2.1 < 2.24 < < 2.4

c. Unlike decimals: 0.5 0.52 0.25 0.252

Like decimals: 0.500 0.520 0.250 0.252

Whole numbers : 500 520 250 252

Ascending order: 250 < 252 < 500 < 520

0.25 < 0.252 < 0.5 < 0.52.

d. Unlike decimals : 21.1 2.11 0.211 0.121

Like decimals : 21.100 2.110 0.211 0.121

Whole numbers : 21100 2110 211 121

Ascending order: 121 < 211 < 2110 < 21100

0.121< 0.211 < 2.11 < 21.1

e. Unlike decimals: 8.0 0.08 0.25 0.252

Like decimals: 8.000 0.080 0.250 0.252

Whole numbers: 8000 80 250 252

Ascending orders 80 < 250 < 252 < 8000

0.08 < 0.25 < 0.252 < 8.0

f. Unlike decimals: 0.35 3.5 0.035 35.0

Like decimals : 0.350 3.500 0.035 35.000

Whole numbers : 350 3500 35 35000

Ascending order: 354 < 350 < 3500 < 35000

0.035 < 0.35 < 3.5 < 35.0

5.

a. Unlike decimals :6.4 6.46 0.646 4.66

Like decimals : 6.400 6.460 0.646 4.660

Whole numbers : 6400 6460 646 4660

Descending order: 6460 > 6400 > 4660 > 646

6.46 > 6.4 > 4.66 > 0.646

b. Unlike decimals: 7 4.7 7.4 0.47

Like decimals: 7.00 4.70 7.40 0.47

Whole numbers: 700 470 740 47

Descending order: 740 > 700 > 470 > 47

7.4 > 7 > 4.7 > 0.47

c. Unlike decimals : 9.21 19.2 2.91 1.29

Like decimals : 9.21 19.20 2.91 1.29

Whole numbers: 921 1920 291 129

Descending order: 1920 > 921 > 291 > 129

19.2 > 9.21 > 2.91 > 1.29

d. Unlike decimals: 0.3 0.41 0.14 0.03

Like decimals: 0.30 0.41 0.14 0.03

Whole number : 30 41 14 3

Descending order: 41 > 30 > 14 > 3

0.41 > 0.3 > 0.14 > 0.03

e. Unlike decimals : 8.62 86.2 0.862 862.0

Like decimals : 8.620 86.200 0.862 862.000

Whole numbers: 8620 86200 862 862000

Descending order : 862000 > 86200 > 8620 > 862

862.0 > 86.2 > 8.62 > 0.862

f. Unlike decimals: 0.95 9.5 95.0 0.095

Like decimals: 0.950 9.500 95.000 0.095

Whole numbers: 950 9500 95000 95

Descending order: 95000 < 9500 < 950 < 95

95.0 < 9.5 < 0.95 < 0.095

Exercise 8 C

1. **a.**

$$\begin{array}{r} 8.94 \\ +\ 3.27 \\ \hline 12.21 \end{array}$$

b.

$$\begin{array}{r} 43.63 \\ +\ 8.45 \\ \hline 52.12 \end{array}$$

c.

$$\begin{array}{r} 16.28 \\ +\ 24.87 \\ +\ \ 8.90 \\ \hline 50.05 \end{array}$$

d.

$$\begin{array}{r} 153.46 \\ +\ 47.89 \\ +\ \ 6.30 \\ \hline 207.65 \end{array}$$

e.

$$\begin{array}{r} 432.93 \\ +\ 56.87 \\ +\ 18.76 \\ \hline 508.56 \end{array}$$

f.

$$\begin{array}{r} 138.\ \ 93 \\ +\ 5\ \ .\ \ 87 \\ +\ 30.\ \ 76 \\ +\ 06.\ \ 30 \\ \hline 175.407 \end{array}$$

g.

$$\begin{array}{r} 104.60 \\ +\ 7\ \ .89 \\ +\ 18.40 \\ \hline 130.89 \end{array}$$

h.

$$\begin{array}{r} 108.899 \\ +919.990 \\ +\ \ 19.390 \\ +\ \ 1\ \ .900 \\ \hline 1050.407 \end{array}$$

i.

$$\begin{array}{r} 108.678 \\ +403.960 \\ +\ \ 09.008 \\ +\ \ 38.800 \\ \hline 560.407 \end{array}$$

j.

$$\begin{array}{r} 017.770 \\ +\ 77.700 \\ +\ 07.777 \\ +\ 00.230 \\ \hline 103.477 \end{array}$$

k.
$$\begin{array}{r} 13.875 \\ +\ 25.500 \\ +\ \ 8.350 \\ \hline 47.725 \end{array}$$

l.
$$\begin{array}{r} 713.200 \\ +\ 08.190 \\ +\ \ 8.008 \\ \hline 709.398 \end{array}$$

m.
$$\begin{array}{r} 428.000 \\ +\ 60.850 \\ +\ \ 0.328 \\ \hline 489.178 \end{array}$$

n.
$$\begin{array}{r} 814.560 \\ +\ 71.608 \\ +\ 11.809 \\ \hline 897.877 \end{array}$$

2. a.
$$\begin{array}{r} 68.83 \\ -\ 18.86 \\ \hline 49.97 \end{array}$$

b.
$$\begin{array}{r} 127.83 \\ -\ 65.31 \\ \hline 62.52 \end{array}$$

c.
$$\begin{array}{r} 5.214\,\text{kg} \\ -\ 0.068\,\text{kg} \\ \hline 5.146\,\text{kg} \end{array}$$

d.
$$\begin{array}{r} 2.565\,\text{L} \\ -\ 1.789\,\text{L} \\ \hline 0.776\,\text{L} \end{array}$$

3. **a.**
$$\begin{array}{r} 13.04 \\ -\ \ 9.87 \\ \hline 3.17 \end{array}$$

b.
$$\begin{array}{r} 60.50 \\ -\ 54.65 \\ \hline 5.85 \end{array}$$

c.
$$\begin{array}{r} 84.00 \\ -\ 36.23 \\ \hline 47.77 \end{array}$$

d.
$$\begin{array}{r} 10.012 \\ +\ 7.236 \\ \hline 2.776 \end{array}$$

e.
$$\begin{array}{r} 827.003 \\ -739.764 \\ \hline 87.239 \end{array}$$

f.
$$\begin{array}{r} 256.314 \\ -\ \ 78.765 \\ \hline 197.549 \end{array}$$

g.
$$\begin{array}{r} 113.416 \\ -\ \ 48.500 \\ \hline 64.916 \end{array}$$

h.
$$\begin{array}{r} 1000.000 \\ -136.325 \\ \hline 863.675 \end{array}$$

i.
$$\begin{array}{r} 753.216 \\ -197.039 \\ \hline 556.177 \end{array}$$

j.
$$\begin{array}{r} 284.240 \\ -\ \ 89.673 \\ \hline 194.567 \end{array}$$

k.
$$\begin{array}{r} 92.70 \\ -\ 63.17 \\ \hline 29.53 \end{array}$$

l.
$$\begin{array}{r} 1107.28 \\ -\ 385.00 \\ \hline 722.28 \end{array}$$

m.
$$\begin{array}{r} 838.00 \\ -\ 672.89 \\ \hline 165.11 \end{array}$$

n.
$$\begin{array}{r} 907.800 \\ -\ 263.116 \\ \hline 644.684 \end{array}$$

o.
$$\begin{array}{r} 72.230 \\ -\ 532.187 \\ \hline 195.043 \end{array}$$

4. Sum of 712.3 and 28.109 is

$$\begin{array}{r} 712.300 \\ +\ 028.109 \\ \hline 740.409 \end{array}$$

Subtract 119.2 from 740.409

$$\begin{array}{r} 740.409 \\ -\ 119.200 \\ \hline 621.209 \end{array}$$

5. Sum of 217.43 and 306.1 is

$$\begin{array}{r} 217.43 \\ +\ 306.10 \\ \hline 523.53 \end{array}$$

Subtract 93.4 from 523.53

$$\begin{array}{r} 523.53 \\ -\ 93.40 \\ \hline 430.13 \end{array}$$

6. Sum of 9,013.85 and 837.56 is

$$\begin{array}{r} 9013.85 \\ +\ 837.56 \\ \hline 9888.41 \end{array}$$

Subtract 777.87 from 9851.41

$$\begin{array}{r} 9\,8\,5\,.\,4\,1 \\ -\,7\,7\,7\,.\,8\,7 \\ \hline 9\,1\,0\,9\,.\,5\,4 \end{array}$$

7. Sum of 1005.6 and 328.173 is

$$\begin{array}{r} 1\,0\,0\,5\,.\,6\,0\,0 \\ +\,3\,2\,8\,.\,1\,7\,3 \\ \hline 1\,3\,3\,3\,.\,7\,7\,3 \end{array}$$

Subtract 428.15 from 1333.773

$$\begin{array}{r} 1\,3\,3\,3\,.\,7\,7\,3 \\ +\,4\,2\,8\,.\,1\,5\,0 \\ \hline 9\,0\,5\,.\,6\,2\,3 \end{array}$$

Exercise 8 D

1. **a.**

$$\begin{array}{r} 2\,.\,1 \\ \times\,.\,4 \\ \hline 8\,0\,4 \\ 6\,3\,0\,\times \\ \hline 7\,.\,1\,4 \end{array}$$

b.

$$\begin{array}{r} 5\,.\,0\,3 \\ \times\,0\,.\,8 \\ \hline 4\,0\,2\,4 \\ 0\,0\,0\,\times \\ \hline 4\,0\,.\,2\,4 \end{array}$$

c.

$$\begin{array}{r} 0\,.\,6\,9 \\ \times\,4\,.\,4 \\ \hline 2\,7\,6 \\ 0\,0\,0\,\times \\ \hline 0\,.\,2\,7\,6 \end{array}$$

d.

$$\begin{array}{r} 0\,.\,5\,8 \\ \times\,0\,.\,5 \\ \hline 2\,9\,0 \\ 0\,0\,0\,\times \\ \hline 0\,.\,2\,9\,0 \end{array}$$

e.

$$\begin{array}{r} 0\,.\,5\,9 \\ \times\,0\,.\,7 \\ \hline 4\,1\,3 \\ 0\,0\,0\,\times \\ \hline 0\,.\,4\,1\,3 \end{array}$$

2. **a.**

5	.	7	
×		7	
3	9.	9	

b.

2	0	.	103	
	×	.	16	
12	0	6	18	
20	1	0	3×	
32	1.	6	48	

c.

62	1.	7	
	×	5	
310	8.	5	

d.

2	3	.	5
×	1	.	3
7	0		5
32	5		×
30	5.	.	5

e.

7	2	.8	17	
		×	13	
21	8	4	51	
72	8	1	7×	
94	6.	.6	21	

f.

8	4	2.	98	
		×	16	
50	5	7	88	
84	2	9	8×	
31	48	7.	68	

g.

5	2	.	87	
		×	12	
1	0	5	74	
52	8	7	×	
63	4	.	44	

h.

9	3	.1	113	
		×	15	
46	5	5	65	
93	1	1	3×	
139	6	.6	85	

3. **a.** 3 . 2 × 10 = 32 **b.** 4.143 × 10 = 41.43

c. 5.173 × 100 = 517.3 **d.** 6.38 × 10 = 63.8

e. 7.7 × 100 = 770 **f.** 8.545 × 1000 = 8545

g. 99.81 × 10 = 998.1 **h.** 1.814 × 100 = 181.4

4. **a.**

6	2	.	3	
×	1	.	7	
4	3	6	1	
6	2	3	×	
10	5.	9	1	

b.

4	.	1	7	
×		3.	1	
	4	1	7	
12	5	1	×	
12	.9	2	7	

c.

	3	.	6
×	2	.	8
	2	8	8
	7	2	×
10	.	0	8

d.

1	0	.0	8
×	1	.	9
9	0	7	2
10	0	8	×
19	.1	5	2

d.

9	.	1	3
×		7.	2
1	8	2	6
63	9	1	×
65	.7	3	6

e.

7	0	.	1
×	6	.	3
2	1	0	3
42	0	6	×
44	1.	6	3

44	1.	6	3
	×	5.	2
22	08	1	5
88	32	6	×
110	4.	07	5

f.

	3	.	03
×	0	.	03
	9	.	09
0	0	0	×
00	0	×	×
0.0	09	0	9

0	.	09	09
	×	3.	3
0	2	7	27
02	72	7	×
0.2	7	9	79

g.

	8	.	8
×	8	.	8
	7	0	4
7	0	4	×
77	.	4	4

h.

	1	.	8
×	7	.	3
	5		4
1	2	6	×
13	.	1	4

i.

	13	.	14
×	8	.	1
	1	3	14
10	51	2	×
10	6.	4	34

5. **a.** 16.8 × 10 = 168 **b.** 217.96 × 10 = 2179.6

c. 38.792 × 100= 3879.2 **d.** 15.690 × 1000 = 1569.1

6. **a.** The length of a turban = 6.75 m

Length of 17 turbans = 6.75 × 17 m

6	.	75
×		17
4	7	25
67	5	×
11	4.	75

17 turban will contain = 114.75 m

b. A drum holds diesel = 18.75 l

7 drum holds diesel = 18.75 × 7 l

18	.	75
×		7
13	1	25

7 drum holds = 131.25 l of diesel

Exercise 8 E

1. **a.**

$$5\overline{)64.85}\,(12.97$$

-5

14

10

48

-45

35

-35

00

Ans. 12.97

b.

$$3\overline{)23.38}\,(7.793$$

-21

23

21

28

-27

10

-9

0

Ans. 7.793

c.
$$\begin{array}{r|l} 2\overline{)134.4} & 67.2 \\ -12\downarrow & \\ \hline 14 & \\ 14\downarrow & \\ \hline 4 & \\ -4 & \\ \hline 0 & \end{array}$$

Ans.67.2

d.
$$\begin{array}{r|l} 2\overline{)0.64} & 0.32 \\ -6\downarrow & \\ \hline 4 & \\ 4 & \\ \hline 0 & \end{array}$$

Ans. 0.32

e.
$$\begin{array}{r|l} 3\overline{)28.05} & 9.35 \\ -27\downarrow & \\ \hline 10 & \\ 9\downarrow & \\ \hline 15 & \\ -15 & \\ \hline 00 & \end{array}$$

Ans. 9.35

2. **a.** $92.3 \div 10 = 9.23$ **b.** $63.42 \div 100 = 0.6342$

c. $63.63 \div 10 = 6.363$ **d.** $801.4 \div 100 = 8.014$

e. $1.89 \div 100 = 0.0189$ **f.** $12.8 \div 1000 = 0.0128$

g. $72.8 \div 10 = 7.28$ **h.** $73.8 \div 100 = 0.738$

i. $74.9 \div 1000 = 0.0749$ **j.** $131.08 \div 10 = 13.108$

k. $211.09 \div 1000 = 0.21109$ **l.** $11.08 \div 1000 = 0.01108$

3. **a.** $72.6 \div 10 = 7.26$ **b.** $5.29 \div 10 = 0.529$

c. $746.8 \div 100 = 7.468$ **d.** $2.135 \div 1000 = 0.2135$

e. $9.06 \div 100 = 0.0906$ **f.** $0.34 \div 10 = 0.034$

Exercise

1. Total no. of pizzas = 9

Each part is divided in to $\frac{1}{3}$

No. of girls get 1/3 of pizza = $9 \div \frac{1}{3}$

$= \frac{9}{1} \times \frac{3}{1} = 27$ girls

2. Cost of 1 kg mangoes $12\frac{1}{2}$

Cost of $6\frac{1}{2}$ kg mangoes = $12\frac{1}{2} \times 6\frac{1}{2}$

$\frac{25}{2} \times \frac{13}{2} = \frac{325}{4} = 81.25$

3. Total length of ribbon = 16m

Length of each piece of ribbon = $\frac{3}{4}$ m

No. of pieces can cut from ribbon = $\frac{16}{1} \div \frac{3}{4}$

$\frac{16}{1} \div \frac{4}{3} = \frac{64}{3}$

20 pieces (Approx).

4. Weight of 1 book = $1\frac{1}{4}$ kg

Weight of 8 books $1\frac{1}{4} \times 8$ kg

$\frac{5}{4} \times \frac{8}{1}$ kg = 10 kg

5. Cost of 1 kg garland = 72. 40 ÷ 8

```
      9.05
   ┌──────
 8 ) 72.40
     72
     ──
      040
       40
      ──
       00
      ──
```

6. Cost of q garland is 9.05

Cost of 1 apple = 15.75

Cost of 25 apples = 15.75 × 25

15	.	75
×		25
78	7	5
3 15	0	×
393	.	7 5

Cost of 25 Apples is 393.75

7. Total length of lace = 351.27 m

Divided into 9 equal parts.

Length of lace = 351.27 ÷ 9 m

```
    39.03
9 )351.27(
   27
   ---
    81
    81
   ---
   0027
     27
   ---
     00
   ---
```

The length of each lace is 39.03m.

HOTS

1.
```
   9.654
 - 0.485
 -------
   8.169
 -------
```

8.169 should be added to 1.485 to make 9.169

2.
```
 7777.7777
+ 777.7770
+  77.7700
+   7.7000
 ---------
8641.0247
 ---------
```

Ans. 8641.0247

3.
```
   999.797
 - 636.141
 ---------
   363.656
 ---------
```

363.656 should be subtract from 999.797 to make 636.141

4. 23456 will be the next decimal number.

5. These are equivalent decimals, so that decimals cannot be arranged in ascending orders.

Mental Maths

1. 34.765 on multiplying with 100 changes to 3476.5.

2. 23.675 on dividing by 10 changed

3. In the product of 45.65 and 7, the number of decimal places cannot be more than 2 .

4. In the product of 3.45 and 3.45, there will be at least 4 number of decimal place

5. The difference of 234.600 will be equal to 0 .

Chapter
9

XXX

Exercise 9 A

1. Fill in the blanks.

a. 4.74 m = 4 m 74 cm **b.** 6.8 km = 6 km 800 m

c. 5.4 cm = 5 cm 4 mm **d.** 9.21 km = 9 km 210 m

e. 3.246 km = 3246 m **f.** 250 m = 0.25 km

g. 4.75 m = 475 cm **h.** 815 cm = 8.15 m

2. Observe and complete the table.

	Measurement (m and cm)	In bigger unit (m)	In small unit (cm)
a.	4 m 50 cm	4.50 m	450 m
b.	45 m 66 cm	45.66 m	4566 m
c.	5 m 25 cm	5.25 m	525 cm
d.	15 m 5 cm	15.05 m	1505 cm
e.	8 m 5 cm	8.05 m	805 cm

3. Use a centimetre scale to measure these pencils in cm and mm

a. 2 cm 9 mm = 2.9 cm **b.** 3 cm 7 mm = 3.7 cm

Exercise 9 B

1. Fill in the blanks.

a. 4.262 kg = 4 kg 262 g **b.** 4.003 kg = 4 kg 3 kg

c. 0.650 kg = 650 g **d.** 89.3 kg = 89 kg 300 g

e. $5\frac{1}{2}$ kg = 5500 g **f.** $6\frac{1}{2}$ kg = 6500 g

g. 2250 g = 2 kg 250 g **h.** 888 g = 0.888 kg

i. 355 g = 355000 kg mg **j.** 613 g = 0.613 g

2. Complete the table.

	Measurement (kg and g)	In bigger unit (kg)	In small unit (g)
a.	7 kg 300 g	7.300 kg	7300 g
b.	6 kg 350 g	6.350 kg	6350 g
c.	4 kg 800 g	4.800 kg	4800 g
d.	7 kg 350 g	7.35 kg	7350 g
e.	3 kg 959 g	3.595 kg	3595 g

Exercise 9 C

1. Fill in the blanks.

a. 2.450 L = 2 L 450 mL **b.** 1.975 L = 1 L 975 mL

c. 54.2 L = 54200 mL **d.** 2895mL = 2.895 L

e. 55 L = 55000 mL **f.** 2005 mL = 2.005 L

	Measurement (L and mL)	In bigger unit (L)	In small unit (mL)
a.	7 L 250 mL	7.350 L	6350 mL
b.	2 L 550 mL	2.550 L	2550 mL
c.	3 L 856 mL	3.856 L	3856 mL
d.	6 L 450 mL	6.45 L	6450 mL
e.	4 L 375 mL	4.375 L	4375 mL

Exercise 9 D

1. **a.**

	m	cm
	308	14
+	312	36
+	608	93
	1229	43

b.

	cm	mm
	127	45
+	584	58
+	549	63
	1261	66

c.

	km	m
	628	440
+	289	670
+	924	541
	1842	651

d.

	L	mL
	809	292
+	306	245
+	212	095
	1327	632

e.

	kg	g
	307	100
+	12	250
+	00	500
	319	850

f.

	L	mL
	304	380
+	17	200
+		625
	322	205

g.

	g	mg
	267	343
+	216	518
+	73	055
	556	916

2. **a.**

	m	cm
	615	59
–	318	30
	297	29

b.

	km	m
	609	435
–	308	487
	300	948

c.

	kg	g
	32	300
–	15	240
	17	060

d.

	g	mg
	927	150
–	910	751
	16	399

e.

	L	mL
	188	700
–	83	254
	105	446

f.

	g	mg
	204	250
–	106	000
	98	250

Exercise 9 E

1. **a.**

8	8	3	3	
		×	5	
44	1	6	5	

441 m 65 cm

b.

1	6	5	0	
		×	4	
54	6	0	0	

5461 L 600 mL

c.

2	6	3	0	8	7	
				×	7	
18	4	1	6	0	9	

1841 g 609 mg

d.

1	0	3	0	0	5	
				×	1	4
4	1	2	0	2	0	
10	3	0	0	5	×	
14	4	2	0	7	0	

1442 km 70 m

e.

6	0	8	9
	×	1	2
12	1	7	8
60	8	9	×
73	0	6	8

73 g 68 mg

f.

7	8	1	2
	×	1	6
46	8	7	2
78	1	2	×
12	49	9	2

124 L 992 mL

g.

9	6	2
×	1	5
48	1	0
96	2	×
144	3	0

144 cm 30 mm

h.

13	3	1	4
	×	1	8
10	65	1	8
60	8	9	×
23	96	5	2

239 kg 652 g

i.

23	2	4
	×	8
48	1	0
96	2	×
144	3	0

18 L 592 mL

2. **a.**

$$7\overline{)27.605}\,3.9435$$

$$\begin{array}{r} -21 \\ \hline 66 \\ -63 \\ \hline 30 \\ -28 \\ \hline 25 \\ 21 \\ \hline 40 \\ 35 \\ \hline 5 \end{array}$$

3 L 943 mL

b.

$$4\overline{)214.14}\,53.53$$

$$\begin{array}{r} -20 \\ \hline 14 \\ 12 \\ \hline 21 \\ -20 \\ \hline 14 \\ 12 \\ \hline 2 \end{array}$$

53 m 53 cm

c.

```
15)430.42 0(20.694
 - 30
  130
  120
   104
    90
    142
    135
     70
     60
      1
```

28 g 694 mg

d.

```
7)724.40(103.48
 - 7
  24
  21
   34
   28
    60
    56
     1
```

103 cm 48 mm

e.

```
11)759.230(69.020
 - 66
  99
  99
   23
   22
    1
```

69 km 20 m

f.

```
18)5162.50(28.680
 - 36
  156
  144
   122
   108
    145
    144
      1
```

28 kg 680 g

Exercise 9 F

1. Estimate and (✓) tick the best measure.

a.  b.  c.  d. 

a. 250 mL **b.** 250 L

a. 10 g **b.** 10 kg

a. 3 mg **b.** 3 kg

a. 10 cm **b.** 10 m

2. Estimate and tick (✗) the measurement of each of the following objects.

(i) Weight of your school bag

a. less than 1 kg

b. about 1 kg

c. more than 1 kg

(ii) Quantity of juice in a jug

a. less than 1L **b.** about 1L **c.** more than 1L

(iii) Height of a window

a. less than 1 m **b.** about 1 m **c.** more than 1 m

(iv) Mass of a table football

a. less than 10 g

b. about 10 g

c. more than 10 g

(v) Length of your lunch box

a. less than 10 cm

b. about 10 cm

c. more than 10 cm

Exercise

1. Distance travelled by bike = 6.5km

Distance travelled by Bus = 4.275k

Total Distance travelled

	km	m
	6	500
+	4	275
	10	775

Nayan travelled 10 km 775 m of distance.

2. Length of Naina's Pencil = 12.5cm

Length of Pankaj's Penalis = 124 mm or 12.4 cm

	cm	mm
	12	5
–	12	4
	00	1

Naina's Pencil is 1 mm longer than Pankaj's Pencil.

3. Ali weigns = 45 kg 500 g

Chandani weighs = 45 kg 500 g + 15 kg 700 g

	k	g
	45	500
+	15	700
	61	200

Chandani weighs 61 kg 200 g.

4. Milk bought from dairy = 3 L 500 ml

Milk bought from milkman = 7 L 250 ml

	L	mL
	3	500
+	7	250
	10	750

Anju bought 10 L 750 ml of milk.

5. Purchase of Tomatoes = 3 kg 250 g

Purchase of Patatoes = 2kg 50 g

Purchase of onions = 500 g

	kg	g
	3	250
+	2	050
	0	500
	5	800

Anita Purchase 5 kg 800 g of vegetables.

6. Milk in a jug = 32

Milk the taken out from jug = 2750 ml or 2.750

	L	mL
	3	000
–	2	750
	0	250

0.250 L of milk was eft in the jug.

7. Total distance between two villages = 40km
Distance coverd by Walking = 9 km 50 m
Distance Covered by train =

	km	m
	40	000
–	9	050
	30	950

Distance covered by train is 30 km 950 m.

8. Totals Destance of travel = 40 km
Distance covered = 20 km 50 m

	km	m
	6	500
–	4	275
	10	775

19 km 950 m of distance still left to cover.

9. Rohan weighs 38 kg 250 g
Sonal weighs 38 kg 500 g

	kg	g
	38	500
–	38	250
	00	250

10. Distance to covered by each step = 50 cm
Total Distance to cover = 500 m or 50000 cm

$$50\overline{)50000}\,(1000$$
$$-\ 50$$
$$\overline{\ \ 00}$$

Kamal will take 1000 steps to cover distance of 500 m or 50000cm.

11. Distance Covered in 1 revolution = 1 m
Diatance covered in 600 revolution =

$$\begin{array}{r} 6\ 0\,0 \\ \times\ 1 \\ \hline 6\ 00 \\ \hline \end{array}$$

It will lover o. 600km in 600 revolution Total

12. Distance he walk every day = 750 m

Distance he walk in a week = 750 × 7

$$\begin{array}{r} 7\ 5\,0 \\ \times\ 7 \\ \hline 52\ 50 \\ \hline \end{array}$$

He walk 5 km 250 m in a week.

13. Tomatoes Packed in a box = 500 g

Boxes need to Pack 8 kg of Tomatoes 8 kg 8000 g

$$\begin{array}{r} 16 \\ 500\overline{)80000} \\ 500 \\ \hline 3000 \\ 3000 \\ \hline 0000 \end{array}$$

16 boxes will be needed to pack 8 kg of tomatoes .

14. Capacity of one cup 250 ml

2.5 L of tea Poured = 2.5L ÷ 250 ml

2.5 L= 2500

$$\begin{array}{r} 10 \\ 250\overline{)2500} \\ 250 \\ \hline 0000 \end{array}$$

HOTS

The correct option is :

1. 1000000
2. 100000

Mental Maths

1. The Correct option is (b) 5 g 6 mg = 5.69/500 mg

2. **a.** A file of 20 notebooks is 20 cm high. The thickness of 2 notebooks is 20 mm.

b. A stack of 20 eraser is 10 cm high. Each eraser is 5 mm thick.

c. A stack of 10 towels is 85.5 cm high. One towel is 85.5 mm thick.

d. 100 papads in a packet are 2.5 cm high. Each papad is 0.25 mm thick.

Chapter
10

XXX

Exercise 10 A

1.

	Items	*Total*	*Average*
a.	5, 15, 35, 25, 45, 95	220	36.6
b.	22.4 cm , 35.3 cm 29.3 cm	87	29
c.	First five prime numbers	28	5.6
d.	18, 24, 29, 52	123	30.75
e.	14 g, 28 g, 35 g, 37 g, 48 g	162	32.4
f.	74, 34, 64, 84 and 54	310	62
g.	$3\frac{1}{2}, 2\frac{3}{4}, 1\frac{1}{4}$ and $4\frac{1}{2}$	$\frac{48}{4} = 12$	3

2.

Number of Items	*Total*	*Average*
a. 15	105	7
b. 10	300	30
c. 21	441	21
d. 12	132	11
e. 12	906	112.5

3. First 10 prime numbers are 2, 3, 5, 7, 11, 13, 17, 19, 23 and 29.

Average of first to prime numbers is

$$= \frac{2+3+5+7+11+13+17+19+23+29}{10} = \frac{129}{10} = 12.9$$

4. First 10 even numbers are 2, 4, 6, 8, 10, 12, 14, 16, 18 and 20.

Average of first 10 even numbers is a

$$= \frac{2+4+6+8+10+12+14+16+18+20}{10} = \frac{110}{10}$$

5. First five whole number are 0, 1, 2, 3 and 4.

Average of first five whole number.

$$= \frac{0+1+2+3+4}{5} = \frac{10}{5} = 2$$

6. First four multiples of 8, 16, 24 and 32

Average of first four multiples of 8.

$$= \frac{8+16+24+32}{4} = \frac{80}{4} = 20$$

7. First six natural numbers are a 1, 2, 3, 4, 5, 6

Average of first six natural numbers a

$$= \frac{1+2+3+4+5+6}{6} = \frac{21}{6} = 3.5$$

8. Rainfall recorded for the month of August = 930 mm

There are 31 days in the month of August.

$$\text{Average of daily rainfall} = \frac{930}{31} \text{ mm} = 30 \text{ mm}$$

9. Average height of a family = 150 cm.

Total height of 5 family members = 150 × 5 = 750

Height of 4 family members = 606 cm

Height of 5th member of family = 750 – 606 = 144 cm

10. Convert hours into minutes

1 hour 25 minutes = 85 minutes, 2 hours 40 minutes 160 minutes, 3 hours 35 minutes = 215 minutes, 4 hours = 240 minutes

$$\text{Average} = \frac{85+160+215+240}{4} = \frac{700}{4} = 175 \text{ minutes}$$

= 2 h 55 min

11. Roshan covered distance in 3 has = 42 km

Roshan covered distance in this = 44 km

$$\text{Average speed} = \frac{44+42}{3+7}\frac{\text{km}}{\text{h}}$$

$$= \frac{86 \text{ km}}{7 \text{ h}} = 12.2 \text{ km/h}$$

12. Average of 20 number = 75.

Total of 20 number = 75 × 20 = 1500

Total without incorrect number = 1500 – 86 = 1414

Total with correct number = 1414 + 896 = 2310

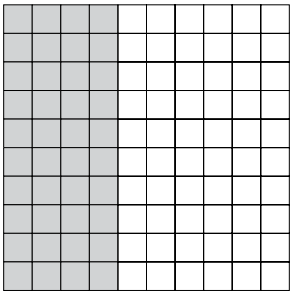
$$\text{Correct} \quad \text{Averare} = \frac{2310}{20} = 115.5$$

13. To tales sales for a week = ₹ 9723

Average sale perday = ₹ $\frac{9723}{7}$ = ₹ 1389

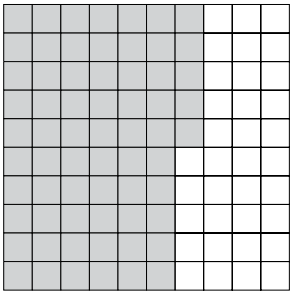
Exercise 10 B

1.



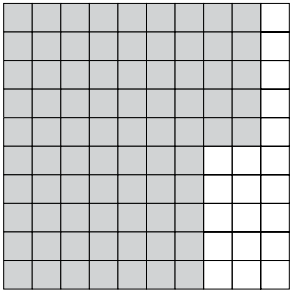
$\frac{40}{100}$

2.



$\frac{65}{100}$

3.



$\frac{85}{100}$

Exercise 10 C

1. **a.** $\frac{30}{100} = \frac{30}{\cancel{100}} \times \cancel{100} = 30\%$

b. $\frac{18}{100} = \frac{18}{\cancel{100}} \times \cancel{100} = 18\%$

c. $\frac{24}{100} = \frac{24}{\cancel{100}} \times \cancel{100} = 24\%$

d. $\frac{55}{100} = \frac{55}{\cancel{100}} \times \cancel{100} = 55\%$

e. $\frac{80}{100} = \frac{80}{\cancel{100}} \times \cancel{100} = 80\%$

f. $\frac{100}{100} = \frac{100}{\cancel{100}} \times \cancel{100} = 100\%$

2. **a.** $\frac{6}{10} = \frac{6 \times 10}{10 \times 10} = \frac{60}{100} = \frac{100}{\cancel{100}} \times \cancel{100} = 60\%$

b. $\frac{18}{25} = \frac{18 \times 4}{25 \times 4} = \frac{72}{100} = \frac{100}{\cancel{100}} \times \cancel{100} = 72\%$

c. $\frac{2}{4} = \frac{2 \times 25}{4 \times 25} = \frac{50}{100} = \frac{50}{\cancel{100}} \times \cancel{100} = 50\%$

d. $\frac{46}{50} = \frac{46 \times 2}{50 \times 2} = \frac{92}{100} = \frac{92}{\cancel{100}} \times \cancel{100} = 92\%$

e. $\frac{26}{15} = \frac{26 \times 6.66}{15 \times 6.66} = \frac{173}{100} = \frac{173}{\cancel{100}} \times \cancel{100} = 173\%$

f. $\frac{20}{40} = \frac{20 \times 2.5}{40 \times 2.5} = \frac{50}{100} = \frac{50}{\cancel{100}} \times \cancel{100} = 50\%$

3. **a.** $\frac{7}{6} = \frac{7}{\cancel{6}_{3}} \times \cancel{100}^{50} = \frac{350}{3}\% = 116\frac{2}{3}\%$

b. $\frac{12}{25} = \frac{18}{\cancel{25}} \times \cancel{100}^{4} = 48\%$

c. $\frac{1}{3} = \frac{1}{3} \times 100 = \frac{100}{3}\% = 33\frac{1}{3}\%$

d. $\frac{9}{12} = \frac{\cancel{9}^{3}}{\cancel{12}_{\cancel{3}}} \times \cancel{100}^{25} = 75\%$

e. $\frac{8}{15} = \frac{8}{\cancel{15}_{3}} \times \cancel{100}^{20} = \frac{160}{3}\% = 53\frac{1}{3}\%$

f. $\frac{6}{5} = \frac{6}{\cancel{5}} \times \cancel{100}^{20} = 120\%$

4. **a.** $2\frac{1}{5} = \frac{11}{5} = \frac{11}{\cancel{5}} \times \cancel{100}^{20} = 220\%$

b. $1\frac{1}{6} = \frac{7}{6} = \frac{7}{\cancel{6}_{3}} \times \cancel{100}^{50} = \frac{350}{3}\% = 116\frac{2}{3}\%$

c. $3\frac{3}{4} = \frac{15}{44} = \frac{15}{\cancel{4}} \times \cancel{100}^{25} = 375\%$

d. $2\frac{3}{8} = \frac{19}{\cancel{8}_{2}} = \frac{15}{\cancel{4}} \times \cancel{100}^{25} = \frac{475}{2}\% = 237\frac{1}{2}\%$

e. $2\frac{1}{4} = \frac{9}{4} = \frac{9}{\cancel{4}} \times \cancel{100}^{25} = 225\%$

f. $3\frac{4}{5} = \frac{9}{5} = \frac{19}{\cancel{5}} \times \cancel{100}^{20} = 380\%$

5. **a.** $3.8 \times 100\% = 380\%$

b. $2.75 \times 100\%\ 275\%$

c. $0.8 \times 100\% = 80\%$

d. $0.75 \times 100\% = 75\%$

e. $0.7 \times 100\% = 70\%$

f. $0.28 \times 100\% = 28\%$

g. $0.625 \times 100\% = 62.5\%$

h. $8.1 \times 100\% = 810\%$

i. $0.004 \times 100\% = 0.4\%$

j. $6.3 \times 100\ \% = 630\%$

k. $0.85 \times 100\% = 85\%$

l. $08 \times 100\% = 8\%$

Exercise 10 D

1. **a.** $15\% = 15 \div 100 = \frac{15}{100} = \frac{3}{20}$

b. $25\% = 25 \div 100 = \frac{25}{100} = \frac{1}{4}$

c. $100\% = 100 \div 100 = \frac{100}{100} = 1$

d. $\frac{2}{6}\% = \frac{2}{6} \div 100 = \frac{\cancel{2}}{6} \times \frac{1}{\cancel{100}_{50}} = \frac{1}{300}$

e. $62\% = 6\,2 \div 100 = \frac{62}{100} = \frac{31}{50}$

f. $75\%. = 75 \div 100 = \frac{75}{100} = \frac{3}{4}$

g. $60\% = 60 \div 100 = \frac{60}{100} = \frac{3}{5}$

h. $20\% = 20 \div 100 = \frac{20}{100} = \frac{1}{5}$

i. $\frac{3}{5}\% = \frac{3}{5} \div 100 = \frac{3}{5} \times \frac{1}{100} = \frac{3}{500}$

j. $1\frac{3}{4}\% = \frac{7}{44} \div 100 = \frac{7}{4} \times \frac{1}{100} = \frac{7}{400}$

k. $2\frac{3}{8}\% = \frac{19}{8} \div 100 = \frac{19}{8} \times \frac{1}{100} = \frac{19}{800}$

l. $5\frac{1}{4}\% = \frac{21}{4} \div \frac{100}{1} = \frac{21}{4} \times \frac{1}{100} = \frac{21}{400}$

2. **a.** $7\% = \frac{7}{100} = 0.07$

b. $9\% = \frac{9}{100} = 0.09$

c. $10\% = \frac{10}{100} = 0.1$

d. $15\% = \frac{15}{100} = 0.15$

e. $75\% = \frac{75}{100} = 0.75$

f. $100\% = \frac{100}{100} = 1$

g. $100\% = \frac{100}{100} = 1$

h. $200\% = \frac{200}{100} = 2$

i. $215\% = \frac{215}{100} = -2.15$

j. $35\% = \frac{35}{100} = 0.35$

k $9.8\% = \frac{9.8}{100} = 0.098$

l. $31.3\% = \frac{31.3}{100} = 31.3$

Exercise 10 E

1. **a.** $25\% \text{ of } 24 = \frac{\cancel{25}^{1}}{\cancel{100}_{4}} \times 24 = \frac{24}{4} = 6$

b. $20\% \text{ of } 200 = \frac{20}{\cancel{100}} \times \cancel{200}^{2} = 40$

c. $25\% \text{ of } 12 = \frac{\cancel{25}^{1}}{\cancel{100}_{4}} \times 12 = \frac{12}{4}$

d. 10% of 100 = $\frac{10}{\cancel{100}} \times \cancel{100} = 10$

e. 25 of 16 = $\frac{\cancel{25}^{1}}{\cancel{100}_{4}} \times 16 = \frac{16}{4} = 4$

f. 50% of 20 = $\frac{\cancel{50}^{1}}{\cancel{100}_{2}} \times 20 = \frac{20}{2} = 4$

g. 2% of 164 = $\frac{\cancel{2}^{1}}{\cancel{100}_{50}} \times 164 = \frac{164}{50} = \frac{82}{25}$

h. 88% of 790 =  = 695.2

i. 10% of 550 =  = 55

j 99% of 400 = $\frac{99}{\cancel{100}} \times \cancel{400}^{4} = 396$

k. 15% of 300 = $\frac{15}{\cancel{100}} \times \cancel{300}^{3} = 45$

l. 20% of 450 = $\frac{20}{1\cancel{00}} \times 45\cancel{0} = 90$

m. 30% of 900 =  = 270

n. 15% of 1500 =  = 225

o. 6.4% of 600 =  = 38.4

p. 8% of 70 = $\frac{8}{10\cancel{0}} \times 7\cancel{0} = \frac{56}{10} = 5.6$

2. **a.** 10% of a rupee

₹ = 100 p

$\frac{10}{\cancel{100}} \times \cancel{100}$ = 10 p

b. 25% of 4 km

1 km = 1000 m

= $\frac{25}{1\cancel{00}} \times 40\cancel{00}$

= 1000 m = 1km

c. 50% of ₹ 10

₹ 1 = 100 p

$\frac{50}{\cancel{100}} \times \cancel{1000}$ = 500 p = ₹ 25

d. 20% of a litre

1 *l* = 1000 ml

$\frac{20}{100} \times 1000$ = 200 ml

e. 7.5% of ₹ 750

$\frac{75}{100} \times 750$ = ₹ 562.5

f. 15% of 2kg

1 kg = 1000 g

$\frac{15}{100} \times 2000$ = 300 g

g. 35% 90

$\frac{35}{100} \times 90$ = 31.5

h. 3.5% of 1kg.

1kg = 1000g

$\frac{3.5}{100} \times 1000$ = 35 g

i. 6% of 1 litre

1 litre = 1000 mL

$\frac{6}{100} \times 1000$ = 60 mL

i. 5% of ₹ 7

₹ 1 = 100 p

$\frac{5}{100} \times 700$ = 35 p

k. 25% of 400 kg

$\frac{25}{100} \times 400$ = 100 Kg

l. 7.3% of 1 m

1 m = 100 cm

$$\frac{7.3}{100} \times 100 = 7.3 \text{ cm}$$

3. 50% of 5 km

$$1 \text{ km} = 1000 \text{ m}$$

$$\frac{50}{100} \times 5000 = 2500 \text{ m} = 2.5\text{km}$$

4. 60% of ₹ 300

$$₹ 1 = 100 \text{ p}$$

$$\frac{60}{100} \times 300 = 180 \text{ p} = ₹ 1.8$$

5. 100% - 25% = 75%

75% of 12 L

$$1\text{L} = 1000 \text{ mL}$$

$$\frac{75}{100} \times 12000 \text{ mL} = 9000 \text{ mL} = 9\text{L}$$

6. 25% of 28

$$\frac{25}{100} \times 28 = \frac{700}{100} = 7 \text{ students}$$

7. Pocket money of one year = ₹ 1800

10% of 1800

$$\frac{10}{100} \times 1800 = ₹ 180$$

Exercise 10 F

1. **a.** 20 of 50

$$\frac{20}{50} \times 100\% = 40\%$$

b. 80 of 100

$$\frac{80}{100} \times 100\% = 80\%$$

c. 40 of 120

$$\frac{40}{120} \times 100\% = \frac{100}{3}\% = 33.33\%$$

d. 30 of 120

$$\frac{30}{120} \times 100\% = \frac{100}{4}\% = 25\%$$

2. **a.** 8 is 33.33 % of 24.

b. 3.5 kg is 10 % of 35 kg.

c. 60 litres is 48 % of 125 litres.

d. ₹ 10.25 is 29.28 % of 35 kg.

3. **a.** 250 of 500

$$\frac{250}{500} \times 100 = 50\%$$

b. 2.5 of 10 km

$$\frac{2.5}{10} \times 100\% = \frac{250}{100} = 25\ \%$$

c. ₹ 250 of ₹ 5000

$$\frac{250}{5000} \times 100 = 5\%$$

HOTS

1. 6% of ₹ 600,000

$$\frac{6}{100} \times 600{,}000 = ₹\ 36{,}000$$

₹ 36000 is commission of trader.

2. 10% of 40000

$$\frac{10}{100} \times 40000 = 4000$$

Population will increase in the next year =

40000 + 4000 = 44000

10% of 44000

$$\frac{10}{100} \times 44000 = 4400$$

Polulation will increase in next 2 years

44000 + 4400 = 48400

3. 5.5 litre of 55 litres

$$\frac{5.5}{55} \times 100\% = 10\%$$

4. 100% – 45% = 55%

55% of 1200

$\frac{55}{100} \times 1200 = 660$

660 students were boys in the school

5. 18% is 27 cm

$\frac{100}{18} \times 27 = 150$ cm

6. 36% of 250 grams is zinc.

$\frac{36}{100} \times 250 = 90$ g of metal is zinc

100% – 36% = 64%

64% of 250 grams is coffer.

64 × 250 = 160 g of metal is coffer.

7. Price of sunglasses by adding profit

₹ 1250 + ₹ 150 = ₹ 1400

₹ 150 of ₹ 1400

$\frac{150}{1400} \times 100\% = 10.7\%$

8. Percentage without pictures = 100 – 15% = 85%

85% of 160 pages

$\frac{85}{100} \times 160 = 136$ pages

9. 50 of 50

$\frac{50}{50} \times 100\% = 100\%$

Raj got 100% marks in maths examination.

10. 30 of 50

$\frac{30}{50} \times 100\% = 60\%$

Anil will pass the examination, he got 60% percent.

Chapter
11

XXXXX

Exercise 11 A

1. **a.**

₹ 76 . 25	
₹ 3 . 25	
₹ 79 . 50	

b.

₹ 87 . 50	
₹ 55 . 25	
₹ 142 . 75	

c.

₹ 32 . 50	
₹ 82 . 50	
₹ 115 . 00	

d.

₹ 42 . 25	
₹ 33 . 50	
₹ 75 . 75	

e.

₹ 15 . 50	
₹ 66 . 25	
₹ 81 . 75	

f.

₹ 28 . 75	
₹ 34 . 25	
₹ 63 . 00	

2. **a.**

₹ 20 . 25	
– ₹ 15 . 50	
₹ 4 . 75	

b.

₹ 64 . 50	
– ₹ 23 . 75	
₹ 40 . 75	

c.

₹ 79 . 25	
– ₹ 54 . 25	
₹ 25 . 00	

d.

₹ 30 . 25	
– ₹ 18 . 25	
₹ 11 . 75	

e.

₹ 15 . 75	
– ₹ 08 . 25	
₹ 7 . 50	

f.

₹ 65 . 25	
– ₹ 15 . 50	
₹ 49 . 75	

3. **a.**

₹ 15 . 85	
× 8	
₹ 126 . 80	

b.

₹ 55 . 50	
× 5	
₹ 277 . 50	

c.

₹ 87 . 75	
× 3	
₹ 263 . 25	

d.

₹ 28 . 50	
× 4	
₹ 114 . 00	

e.

₹ 64 . 75	
× 7	
₹ 453 . 25	

f.

₹ 217 . 50	
× 2	
₹ 435 . 00	

4. **a.**

$$\begin{array}{r|l} 6 & 52.50 \\ -48 & 8.75 \\ \hline 45 & \\ 42 & \\ \hline 30 & \\ 30 & \\ \hline 00 & \end{array}$$

₹ 8.75

b.

$$\begin{array}{r|l} 10 & 60.70 \\ -60 & 6.07 \\ \hline 0070 & \\ 70 & \\ \hline 00 & \end{array}$$

₹ 6.07

c.

$$\begin{array}{r|l} 7 & 56.56 \\ -56 & 8.08 \\ \hline 0056 & \\ 56 & \\ \hline 00 & \end{array}$$

₹ 8.08

d.

$$\begin{array}{r|l} 11 & 88.33 \\ -88 & 8.03 \\ \hline 0033 & \\ 33 & \\ \hline 00 & \end{array}$$

₹ 8.03

e.

$$\begin{array}{r|l} 5 & 95.75 \\ -5 & 19.75 \\ \hline 45 & \\ 45 & \\ \hline 007 & \\ 5 & \\ \hline 25 & \\ 25 & \\ \hline 00 & \end{array}$$

₹ 19.15

f.

$$\begin{array}{r|l} 2 & 68.84 \\ -6 & 34.42 \\ \hline 08 & \\ 8 & \\ \hline 08 & \\ 8 & \\ \hline 04 & \\ 4 & \\ \hline 0 & \end{array}$$

₹ 34.42

Exercise 11 B

1. **a.** 2 muffins for ₹ 360

Price of 1 muffin = $\frac{360}{2}$

= ₹ 180

Price of 5 muffin

= ₹ 180 × 5 = ₹ 900

b. 30 m cloth for ₹ 460

Price of 1 m cloth = $\frac{460}{30}$

= ₹ 15.33

Price of a 48 m cloth

= 15.33 × 48 = ₹ 735.84

Given Price of 5 muffin = ₹ 850

Given price of cloth for 48 m = ₹ 912

action '*a*' is better deal.

2. **a.** Cost of 6 items = ₹ 216

Cost of 1 item = $\frac{216}{6}$ = ₹ 36

b. Cast of 5 items = ₹ 1250

Cost of 1 item = ₹ $\frac{1250}{5}$ = ₹ 250

3. Cost of 20 notebooks = ₹ 500

Cost of each notebook = ₹ $\frac{500}{20}$ = ₹ 25

Cost of is notebooks = ₹ 25 × 15 = ₹ 375

4. Cost of so cherries = ₹ 200

Cost of each cherry = ₹ $\frac{200}{50}$ = ₹ 4

Cost of 78 cherries = ₹ 78 × 4 = ₹ 312

5. Payment of 6 days = ₹ 750

Payment of 1 day a = ₹ $\frac{750}{6}$ = ₹ 125

Payment of 23 days = ₹ 125 × 23 = ₹ 2,875

6. Cost of 7 toys = ₹ 294

Cost of 1 toy = ₹ $\frac{294}{7}$ = ₹ 42

Cost of 2 toys = 242 × 2 = ₹ 84

7. Cost of 12 kg Sugar = ₹ 400

Cost of 1 kg Sugar = ₹ $\frac{240}{12}$ = ₹ 20

Cost of 3 kg Sugar = 20 × 3 = ₹ 60

8. Rohan earns in 7 days = ₹ 840

Rohan earns in 1 day = ₹ $\frac{840}{7}$ = ₹ 120

Rohan earns in 28 days = ₹ 120 × 28 = ₹ 3,360

9. Cost of 2.5L milk = ₹ 90

Cost of 1L milk = ₹ $\frac{90}{2.5}$ = ₹ 36

Cost of 12L milk = ₹ 36 × 12 = ₹ 432

10. Last of 15 bags suger = ₹ 450

Each bag contains 3 kg of sugar

Cost of 3 kg of sugar = $\frac{450}{15}$ = ₹ 30

Cost of 1 kg of sugar = ₹ $\frac{30}{3}$ = ₹ 10

Exercise 11 C

1.

S.No.	*Item*	*Quantity (Qty)*	*Rate (in ₹)*	*Amount (Qty) × (Rate in ₹)*
1.	T-Shirt	3	625.00	1875
2.	Toys	5	814.00	4070
3.	Total	8		5945

2.

S.No.	*Item*	*Quantity*	*Rate (in ₹)*	*Amount (Qty) × (Rate in ₹)*
1.	Rice	6 kg	35.00	210.00
2.	Wheat	3kg	75.00	225.00
3.	Surf	4 packets	38.00	152.00
4.	Soap	12	10.25	123.00
	Total			710.00

₹ 1290 will be returned.

3. a.

S.No.	*Item*	*Quantity*	*Rate (in ₹)*	*Amount (Qty) × (Rate in ₹)*
1.	Chips	4 packets	4.35	17.4
2.	Biscuit	7 packets	12.00	84.00
3.	Toffee	8 packets	11.25	90.00
4.	Apple juice	9 bottles	20.00	180.00
	Total			371.4

b.

S.No.	*Item*	*Quantity*	*Rate (in ₹)*	*Amount (Qty) × (Rate in ₹)*
1.	Pen	15	18.00	270.00
2.	Notebook	18	70.00	1260.00
3.	Coloured pencil box	100	20.00	2000.00
4.	Adhesive bottles	4	200.00	800.00
	Total			4330

c.

S.No.	*Item*	*Quantity*	*Rate (in ₹)*	*Amount (in ₹)*
1.	Shirt	4	450.00	1800.00
2.	Trouser	5	900.00	4500.00
3.	Vest	8	50.00	400.00
4.	Handkerchief	10	20.00	200.00
	Total			6900

Exercise 11 D

1. If selling price > Cost Price, we get the profit.
If Cost Price > selling price, we bare the loss.

a. loss
b. profit
c. loss
d. profit
e. loss
f. profit
g. profit
h. profit
i. profit
j. profit

2.

S.N.	*Cost Price*	*Selling Price*	*Profit*	*Loss*
a.	₹ 2400	₹ 2800	₹ 400	
b.	₹ 2800	₹ 900	₹ 100	

S.N.	Cost Price	Selling Price	Profit	Loss
c.	₹ 4100	₹ 3800		₹ 300
d.	₹ 1405	₹ 14550	₹ 45	
e.	₹ 6390	₹ 5900		₹ 490
f.	₹ 9080.00	₹ 8356	₹ 724.00	
g.	₹ 9899.00	₹ 10775		₹ 876.00
h.	₹ 7854.00	₹ 7972		₹ 118.00
i.	₹ 5670.00	₹ 6569	₹ 899.00	

3. Selling price of the article = ₹ 650

Loss on sale = ₹ 130

Cost price of the article = ₹ 650 + ₹ 130 = ₹ 780

4. Cost Price of the 5 phones = ₹ 2,05,000

Selling price of the 5 phones of = ₹ 2,25,000

Profit on sale of 5 phones = ₹ 2,25000 – 20,500 = ₹ 20,000

Profit earned on one phone = $\frac{20,000}{5}$ = ₹ 4000

5. Cost price of books = ₹ 1099.00

Profit on sale = ₹ 101.00

Selling price of books = ₹ 1200

6. Cost price of mobile = ₹ 7675

Selling price of mobile = ₹ 3629

CP > SP, We bare the loss.

7. Cost price of cycle = ₹ 650

Profit on o sale = ₹ 75

Selling price of cycle = ₹ 650 + ₹ 75 = ₹ 725

8. Cost price of pen = ₹ 18.50

Selling price of pen = ₹ 25.00

SP ? CP, we get the profit.

9. Cost price of fan = ₹ 735.00

Loss on sale = ₹ 50.00

Selling price of fan = ₹ 735.00 + ₹ 50.00 = ₹ 785.00

10. Cost price of wrist watch = ₹ 4390

Selling price of wrist watch = ₹ 5986

Sp > Cp, we get the profit

Profit on sale = ₹ 5986 – ₹ 4390 = ₹ 1596

11. Cost price of land = ₹ 8,39,560

Selling price of land = ₹ 9,83,900

Sp > Cp, we get the profit

Profit on sale = ₹ 9,83,900 – ₹ 8,39,500 = ₹ 1,44,400

12. Cost price of painting = ₹ 5780

Selling price of painting = ₹ 6430

Sp > Cp, we get the profit

Profit on sale = ₹ 6430 – ₹ 5780 = ₹ 650

13. Cost Price of earrings = ₹ 9000

Selling price of earrings = ₹ 9600

Profit on sale = ₹ 9600 – ₹ 9000 = ₹ 600

14. Cost price of Cycle = ₹ 4960

Selling price of Cycle = ₹ 3860

Cp > Sp, we are the loss.

Loss on sale = ₹ 4960 – ₹ 3860 = ₹ 1100

15. Cost price of TV = ₹ 18,950

Loss on sale = ₹ 4780

Selling price of TV = ₹ 18,950 + ₹ 4780 = ₹ 23,730

16. Selling price of Two-wheeler = ₹ 20,000

Prosit on sale = ₹ 2500

Cost price of Two-wheeler = ₹ 20,000 – ₹ 250 = ₹ 17,500

Exercise 11 F

1. **a.** 2% of 164

$= \frac{2}{100} \times 164 = 3.28$

b. 10% of 550

$\frac{10}{100} \times 550 = 55$

c. 15% of 625

$\frac{15}{100} \times 625 = 93.75$

d. 88% of 790

$\frac{88}{100} \times 790 = 695.2$

e. 99% of 400

$$\frac{99}{100} \times 400 = 396$$

f. 25% of 200

$$\frac{25}{100} \times 200 = 50$$

2. **a.** 10% of 20

$$\frac{10}{100} \times 10 = 2$$

20% of 10

$$\frac{20}{100} \times 20 = 2$$

Both are equal . So, no one is smaller.

b. 13% of 400

$$\frac{13}{100} \times 400$$

31% of 300

$$\frac{31}{100} \times 300 = 93$$

13% of you is smaller.

c. 26% of 250

$$\frac{26}{100} \times 250 = 65$$

25% of 260

$$\frac{25}{100} \times 260 = 65$$

Both are equal, no one is smaller

d. 88% of 400

$$\frac{88}{100} \times 400 = 352$$

75% of 900

$$\frac{75}{100} \times 900 = 675$$

88% of 400 is smaller.

e. 46% of 500

$$\frac{46}{100} \times 500 = 225$$

40% of 600

$$\frac{40}{100} \times 600 = 240$$

46% of 500 is smaller.

3.

S. No.	*CP*	*SP*	*Profit % or loss%*
a.	300	400	33.33
b.	500	250	50
c.	840	630	25
d.	50	100	50
e.	210	273	30

Exercise 11 G

1.

Principal	*Rate of Interest*	*Time*	*Sinthe interest*	*Amount*
500	10%	1 year	50	550
2000	8%	2 year	320	2320
10000	5%	3 year	1500	11500
25000	3%	5 year	3750	28750
50000	15%	4 year	30000	80000

2. Principal = ₹ 12000, Rate = 7%, Time = 1 year

$$\text{S.I.} = \frac{P \times R \times T}{100}$$

$$= \frac{12000 \times 7 \times 1}{100} = \frac{84000}{100} = ₹\ 840$$

3. Principal = ₹ 5000, Rate = 11%, Time = 0.5 year

$$\text{S.I.} = \frac{5000 \times 11 \times 0.5}{100} = \frac{27500}{100} = ₹\ 273$$

4. Principal = ₹ 90000, Rate = 9%, Time = 1.5 year

$$\text{S.I.} = \frac{90000 \times 9 \times 1.5}{100} = \frac{1215000}{100} = ₹\ 12150$$

5. Principal = ₹ 16874, SI = ₹ 1658

Amount = Principal + Simple Interest

= ₹ 16,874 + ₹ 1658

= ₹ 18532

6. Amount = ₹ 6000; Principal = ₹ 5400

Simple Interest = Amount – Principal

Simple Interest = ₹ 6000 – ₹ 5400 = ₹ 600

HOTS

1. Cost of a toy = ₹ 180

Cost of 7 toy = ₹ 180 × 7 = ₹ 1260

= ₹ 2000 – ₹ 1260 = 740

Shopkeeper will give you ₹ 740.

2. Cost price of bag of sugar = ₹ 1550

Selling price of bag of sugar = ₹ 1550

Profit or less on sale = ₹ 1550 – ₹ 1550 = ₹ 0

There is no profit or loss.

3. SI = ₹ 1500, A = ₹ 9500

$$\begin{aligned} \text{Principal} &= \text{Amount} - \text{Simple Interest} \\ &= ₹\,9500 - ₹\,1500 \\ &= ₹\,8000 \end{aligned}$$

4. Time = 24 years , Rate = 5% , SI = ₹ 2000

$$P = \frac{SI \times 100}{R \times T}$$

$$P = \frac{2000 \times 100}{5 \times 24}$$

$$= \frac{200000}{120}$$

$$= ₹\,1666.6$$

Mental Maths

1. In case of profit, sf, is greater than the of CP.

2. If CP is more than the SP, then there is loss.

3. SP + loss = CP .

4. CP + Profit = SP

5. Profit/Loss Per cent is always caleulated on CP

Chapter
12

XXXXX

Exercise 12 A

1. **a.** $°C = \frac{(°f - 32) \times 5}{9}$

$$°C = \frac{(59 - 32) \times 5}{9} = \frac{135}{9} = 15°C$$

b. $°C = \frac{(°f - 32) \times 5}{9}$

$$°C = \frac{(68 - 32) \times 5}{9} = \frac{180}{9} = 20°C$$

c. $°C = \frac{(°f - 32) \times 5}{9}$

$$°C = \frac{(77 - 32) \times 5}{9} = \frac{225}{9} = 25°C$$

d. $°C = \frac{(°f - 32) \times 5}{9}$

$$°C = \frac{(96.8 - 32) \times 5}{9} = \frac{324}{9} = 36°C$$

e. $°C = \frac{(°f - 32) \times 5}{9}$

$$°C = \frac{(116.6 - 32) \times 5}{9} = \frac{423}{9} = 47°C$$

f. $°C = \frac{(°f - 32) \times 5}{9}$

$$°C = \frac{(131 - 32) \times 5}{9} = \frac{495}{9} = 55°C$$

g. $°C = \frac{(°f - 32) \times 5}{9}$

$$°C = \frac{(149 - 32) \times 5}{9} = \frac{585}{9} = 65°C$$

h. $°C = \frac{(°f - 32) \times 5}{9}$

$$°C = \frac{(170.6 - 32) \times 5}{9} = \frac{693}{9} = 77°C$$

i. $°C = \frac{(°f - 32) \times 5}{9}$

$$°C = \frac{(185 - 32) \times 5}{9} = \frac{765}{9} = 85°C$$

j. $°C = \frac{(°f - 32) \times 5}{9}$

$$°C = \frac{(122 - 32) \times 5}{9} = \frac{450}{9} = 77°C$$

2. **a.** $°F = \left(\frac{9}{5} \times °C\right) + 32$

$$°F = \left(\frac{9}{5} \times 11\right) + 32$$

$$= 19.8 + 32 = 51.8°F$$

b. $°F = \left(\frac{9}{5} \times °C\right) + 32$

$$°F = \left(\frac{9}{5} \times 18\right) + 32$$

$$= 32.4 + 32 = 64.4°F$$

c. $°F = \left(\frac{9}{5} \times °C\right) + 32$

$$°F = \left(\frac{9}{5} \times 25\right) + 32$$

$$= 45 + 32 = 77°F$$

d. $°F = \left(\frac{9}{5} \times °C\right) + 32$

$$°F = \left(\frac{9}{5} \times 34\right) + 32$$

$$= 61.2 + 32 = 93.2°F$$

e. $°F = \left(\frac{9}{5} \times °C\right) + 32$

$$°F = \left(\frac{9}{5} \times 45\right) + 32$$

$$= 81 + 3 = 84°F$$

f. $°F = \left(\frac{9}{5} \times °C\right) + 32$

$°F = \left(\frac{9}{5} \times 52\right) + 32$

$= 93.6 + 32 = 125.6°F$

g. $°F = \left(\frac{9}{5} \times °C\right) + 32$

$°F = \left(\frac{9}{5} \times 75\right) + 32$

$= 135 + 32 = 167°F$

h. $°F = \left(\frac{9}{5} \times °C\right) + 32$

$°F = \left(\frac{9}{5} \times 83\right) + 32$

$= 149.4 + 32 = 181.4°F$

i. $°F = \left(\frac{9}{5} \times °C\right) + 32$

$°F = \left(\frac{9}{5} \times 95\right) + 32$

$= 171 + 32 = 203°F$

j. $°F = \left(\frac{9}{5} \times °C\right) + 32$

$°F = \left(\frac{9}{5} \times 100\right) + 32$

$= 180 + 32 = 212°F$

3.

S. No.	*° Celsius*	*° Farenheit*
a.	50	122
b.	37.77	100
c.	66.11	151
d.	92	197.6
e.	73	163.4
f.	102	215.6
g.	93.33	200

Chapter
13

XXXXX

Exercise 13 A

1. **a.** 5h = 5 × 60 min

5h = 300 min

b. 2h 4min = 2 × 60 min + 4 min

= 120 min + 4 min.

= 124 min.

c. 6 hours = 6 × 60 min.

= 360 min.

d. 10 hours 25 min. = 10 × 60 min + 25 min

= 600 min + 25 min

= 625 min

e. 12 hours 5 minutes = 12 × 60 min + 5 min

= 720 min + 5 min

= 725 min

f. 22 hour 50 minutes = 22 × 60 min + 50 min

= 1320 min + 50 min

= 1370 min.

2. **a.** 500 min $= \frac{500}{60 \text{ min}}$

= 8.33 hours

0.33 × 60 = 20 min

500 minutes = 8 h 20 min.

b. 800 minutes $= \frac{800}{60 \text{ min}}$

0.33 × 60 = 20 min.

800 minutes = 13 h. 20 min.

c. 710 minutes $= \frac{710}{60 \text{ min}}$

= 11.83 h

0.83 × 60 = 50 min.

710 minutes = 11 h 50 min

d. 3000 minutes $= \frac{3000}{60 \text{ min}}$

$= 50$ hours.

e. 1500 minutes $= \frac{1500}{60 \text{ min}}$

$= 25$ hours.

f. 2700 minutes $= \frac{2700}{60 \text{ min}}$

$= 45$ hours

3. a. 5 minutes $= 5 \times 60$ sec.

$= 300$ sec.

b. 7 minutes $= 7 \times 60$ see

$= 420$ see

c. 4 minutes 25 sec $= 4 \times 60$ sec + 25 sec

$= 240$ sec + 25 sec

$= 265$ second

d. 5 minutes 45 seconds $= 5 \times 60$ sec + 45 sec

$= 300$ sec + 45 sec

$= 345$ sec

e. 25 minutes to seconds $= 25 \times 60$ sec + 10 sec

$= 1500$ sec + 10 sec

$= 1510$ sec

f. 35 minutes + 25 Seconds $= 35 \times 60$ sec + 25 sec

$= 210$ sec + 25 sec

$= 2125$ sec

4. a. 2 year 4 months $= 2 \times 365$ days + 4×30 day

$= 730$ days + 120 days

$= 850$ days

b. 4 years 200 days $= 4 \times 365$ days + 200 days

$= 1460$ days + 200

$= 1660$ days

c. 3 months 28 days $= 3 \times 30$ days + 28 days

$= 90$ days + 28 days

$= 118$ days.

d. 15 weeks 4 days = 15 × 7 days + 4 days
= 105 days + 4 days
= 109 days

e. 6 years 4 months 25 days = 6 × 365 days + 4 × 30 days + 25 days
= 2190 days + 120 days + 25 days
= 2335 days

Exercise 13 B

1. **a.** 200 min $= \frac{200}{60 \text{ min}}$
= 3.33 h.

0.33 × 60 = 20 min.

200 min = 3h 208 min.

b. 380 min $= \frac{380}{60 \text{ min}}$
= 6.33h

0.33 × 60 = 20 min.

380 min = 6 h 20 min

c. 250 min $= \frac{250}{60 \text{ min}}$
= 4.16 min

0.16 × 60 = 10 min

250 min = 4h 10 min

d. 158 min $= \frac{158}{60 \text{ min}}$
= 2.63
= 0.63 × 60
= 38 min

158 min = 2 h 38 min

2. **a.** 475 sec $= \frac{475}{60 \text{ min}}$
= 7.91 min

0.91 × 60 = 55 sec

475 sec = 7 min 55 sec

b. 700 sec $= \frac{700}{60 \text{ min}}$

$= 11.66$ min

$0.66 \times 60 = 40$ sec

700 sec $= 11$ min 40 sec.

c. 478 sec $= \frac{478}{60 \text{ min}}$

$= 7.96$ min.

$0.96 \times 60 = 58$ sec

478 sec $= 7$ min 58 sec

d. 732 sec $= \frac{732}{60 \text{ min}}$

$= 12.2$ min

$0.2 \times 60 = 732$ sec

3. a. 24 days $= \frac{24}{7 \text{ days}}$

$= 3.42$

$0.42 \times 7 = 3$ days

24 days $= 3$ weeks 3 days

b. 98 days $= \frac{98}{7 \text{ days}}$

$= 14$ weeks

c. 345 days $= \frac{345}{7 \text{ days}}$

$= 49.2$ weeks

$0.2 \times 7 = 2$ days

345 day $= 49$ weeks 2 days

d. 55 days $= \frac{55}{7 \text{ days}}$

$= 7.85$ weeks

$0.85 \times 7 = 6$ days

55 days $= 7$ weeks 6 days

4. a. 260 days $= \frac{260}{30 \text{ days}}$

$= 80$ 6 months

0.668 × 30 = 20 days

260 days = 8 months 20 days

b. 255 days $= \frac{255}{30 \text{ days}}$

$= 8.5$ months

0.5 × 30 = 15 days.

255 day = 8 months is days

c. 68 days $= \frac{68}{30 \text{ days}}$

$= 2.26$ months

0.26 × 30 = 8 days

68 days = 2 months 8 days.

d. 195 days $= \frac{195}{30 \text{ days}}$

$= 6.5$ months

0.5 × 30 = 15 days

195 days = 6 month's 15 days.

5. a. 8 years $= 8 \times 12$ months

$= 96$ months.

b. 3 years 2 months $= 3 \times 12$ months + 2 month

$= 36$ months + 2 months

$= 38$ months

c. 8 years 4 months $= 8 \times 12$ months + 4 months

$= 96$ months + 4 months

$= 100$ months

6. a. 30 months $= \frac{30}{12 \text{ months}}$

$= 2.5$ years

0.5 × 12 = 6 months

30 months = 2 years 6 months

b. 45 months $= \frac{45}{12 \text{ months}}$

$= 3.75$ years

0.75 × 12 = 9 months

45 months = 3 years 9 months

c. 65 months $= \frac{65}{12 \text{ months}}$

$= 5.41$ years

0.41×12 $= 5$ months

65 months $= 5$ years 5 months

d. 95 months $= \frac{95}{12 \text{ months}}$

$= 7.91$ Years

0.91×12 $= 11$ months

95 months $= 7$ years 11 months

Exercise 13 C

1. **a.**

h	min
3	40
+ 5	10
8	50

8h 50 min

b.

h	min
1	
6	45
+ 0	58
7	103

1h 43 min

7h 43 min

c.

min	sec
1	
3	45
+ 4	27
8	72

1min 43 sec

8 min 12 sec

d.

h	min	sec
1		
2	24	00
+ 2	55	06
+ 0	00	14
5	79	23

1min 19 sec

5h 19 min 23 sec

2. **a.**

h	min
7	56
– 5	35
2	21

2h 21 min

b.

h	min
	60 + 20
10	80
~~11~~	~~20~~
– 5	45
5	35

5h 35 min

c.

h	min
	60 + 25
11	85
~~12~~	~~25~~
– 8	50
3	35

3m 35 sec

d.

h	min
	60 + 22
17	82
~~18~~	~~22~~
– 7	54
10	28

10h 28 min

e.

h	min	sec
15	42	10
– 8	16	09
7	26	01

7 h 26 min 1 sec

f.

h	min	sec
	60 + 18	60 + 18
11	70	78
~~12~~	~~10~~	~~18~~
– 5	18	20
6	52	58

6 h 52 min 58 sec

3. **a.**

years	months
1	
5	7
+ 4	5
10	12

b.

years	months
1	
2	10
+ 2	10
5	20

c.

years	months
3	6
+ 4	2
7	8

7 years 8 month

d.

years	months
1	
12	05
+13	07
26	12

26 years

4. **a.**

years	months
7	5
– 3	5
4	0

4 years

b.

years	months
11	15
~~12~~	~~3~~
– 6	9
5	6

5 years 6 months

c.

years	months
8	17
~~9~~	~~5~~
– 7	7
1	10

1 years 10 month

d.

years	months
17	16
~~18~~	~~04~~
– 9	10
8	06

8 years 6 month

a. 30 months $= \frac{30}{12 \text{ months}}$

$= 2.5$ years

$0.5 \times 12 = 6$ months

30 months = 2 years 6 months.

b. 45 months $= \frac{45}{12 \text{ months}}$

$= 3.75$ years

$0.78 \times 12 = 9$ months

45 months = 3 years 9 months

c. 65 months $= \frac{65}{12 \text{ months}}$

$= 5.41$ years

$0.41 \times 12 = 5$ months

65 months = 5 years 5 months

d. 95 months $= \frac{95}{12 \text{ months}}$

$= 7.91$ years

$0.91 \times 12 = 11$ months

95 months = 7 years 11 months.

Exercise 13 D

1. Time spend in reading newspaper = 120 minutes.

$= \frac{120}{60 \text{ min}}$

Preeti spends in redding newspaper = 2 hours.

2. Time spent on driving taxi = 1 hour 35 minutes

= 1 × 60 minutes

+ 35 minutes

= 60 min + 35 min

= 95 min

3. Time spent in company A = 3 years 2 months

Time spent in company B = 40 months

= 3 years 4 months

Priya worked in company B for a longer time.

4. No. of days as spent in painting class = 135 days

$$= \frac{135}{60 \text{ days}}$$

= 4 months 15 days.

Anu spend 4 months in 15 days in fainting classes.

5. Time spent in cartoon show = 43 minutes

Time spent in music show = 30 minutes

Total time spent in watching television = 45 min + 30min

= 75 min

= 1h 15 min

6. Time taken by bus to reach Mumbai to Patna

= 4h 30 min

Time taken by bus after broke down =

h	min
4^{1}	50
+ 1	30
6	80

6 h 20 min.

7. Time taken by Mrs. Bhagat = 2h 10 min

Time taken by Mrs. Mishra = 1h 55 min

h	min
1	70
~~2~~	~~16~~
– 1	55
0	15

Mrs. Bharat spends 15 minutes more time then. Mrs Mishra for looking after her garden.

8. Workers worked on Monday = 8 h 30 min 15 sec

On Tuesday workers worked less than Monday. = 3 h 20 min 8 sec

Workers worked on Monday =

	h	min	sec
	8	30	15
–	3	10	08
	5	10	07

5 hours 10 minutes 7 seconds.

Exercise 13 D

1. **a.** The time after 5:30 am

5:30 am + 4 hours ⟶ 9:30 a.m + 30 min ⟶ 10:00 am

b. The time after 11:10 a.m

11:10 a.m + 7 hours ⟶ 6:10 p.m + 45 min. ⟶ 6:55 p.m

c. The time after Midnight

12:00 p.m + 3 hours ⟶ 3:00 a.m + 5 min. ⟶ 3:05 am

d. The time after 9:30 pm

9:30 p.m 5 hours ⟶ 2:30 am 15 min. ⟶ 2:45 a.m

2. **a.** Time before 7:15 am

7:15 – 6 hours ⟶ 1:15 a.m

b. Time before 6:30 p.m.

16:30 p.m – 15 hour ⟶ 3:30 a.m.

c. Time before 5:00 pm

5:00 p.m 5 hours ⟶ 12:00 pm – 5 min ⟶ 11:55 am

d. Time before 9:30 a.m.

9:30 am – 7 hours ⟶ 2:30 a.m – 20 min ⟶ 2:10 am

3. Time spent in Delhi = 3 years 5 months

Time spent in Gujarat = 1 year 11 months

years	months
3	05
– 1	11
1	06

Mr. Jha spent 1 year 6 months longer than in Delhi than Gujarat.

4. Time spent in Patna = 2 year 7 months

Time spent in Gaya = 2 year 9 months.

years	months
1	
2	7
+ 2	9
5	16

Total time she spend in both places = 5 year 4 months.

5. School starts at 7:50 am

7:50 am + 5 hours $\longrightarrow$ 12:50 p.m.

School overs at 12:50 p.m

6. Tourist bus starts from Aara at 7:00 pm

7:00 p.m + 6 hours $\longrightarrow$ 1:00 am – 45 min $\longrightarrow$ 1:45 a.m

It will reach Aara at 1:45 am

7. Class Picnic over at 5:00 pm

5:00 p.m – 6 hours $\longrightarrow$ 11:00 am – 30 min $\longrightarrow$ 10:30 a.m.

It begans at 10:30 am

8. Mona started her homework at 6:55 pm

6:55 pm + 1 hour $\longrightarrow$ 7:55 pm + 5 min $\longrightarrow$ 8:00 pm

Mona finished her homework at 8:00 pm

9. Manju joined swimming classes on 20 May.

20 May to 31 May = 11 days

Days left after month of may = 4.5 – 11 = 34 days

1 June to 30 June = 30 days.

Days left after month of June = 45 – (11 + 30)

= 45 – (41)

= 4 days

4 day after 30 June will be 4 July.

2 July will be the last date of class.

10. Rakesh went Chennai on 25 December for 20 days.

20 days after 25 December = 25 + 8 = 31 December

Days left after 31 December is 14 = 14 January

Rakesh will leave on 14 January

11. Sports day on 5 February.

Date before 40 days.

February to 1 February = 4 days

Days left before the month of February = 36 days.

31 January to 1 January = 31 days.

27th December would be the date of beginning.

12. Karuna Kara started knitting on 26 January.

26 January to 31 January = 5 days.

Days left after month of January = 17 – 5 = 12

12 days after 31 January will be = 12 February.

Exercise 13 E

1.

S. No.	*speed (s)* $S = \frac{D}{T}$	*Time (T)* $T = \frac{D}{S}$	*Distance (0) D = S × T*
a.	D = 12 km/h	5h	60 kjm
b.	36 km/h	2h	72km
c.	70 km/h	$8\frac{1}{2}$ h	495km
d.	45.5 m/s	2h	50 km
e.	25 m/s	60s	50 km
f.	8 m/s	60 s	480 m
g.	25km/hr	2h	50 km.
h.	40 km/hr	3hours	120km
i.	5 km/hr	2 hours	10 km
j.	90 km/h	6 hours	540 km
k.	18 km/hr	2hours	36 km
l.	5 km/h	4 hours	20 km
m.	100 km/hr	0.5 hours	50 km

2. **a.** Distance = speed × Time

= 40 km/h × 3h

= 120 km

b. Distance = speed × Time

= 70 km/h × 5 h

= 350 km

c. Distance = speed × Time
= 10 m/sec × 405 min
= 10 m/sec × 24300 Sec
= 243000 m

d. Distance = speed × Timeo
= 25 m/sec × 40 sec
= 1000 m

e. Distance = speed × Times
= 46 km/h × 12 h
= 552 km

f. Distance = Speed × Time
= 60 km/h × 5h
= 300 km

3. **a.** Time $= \frac{\text{Distance}}{\text{Speed}}$
$= \frac{110\ \text{km}}{10\ \text{km/h}}$
= 11 h

b. Time $= \frac{\text{Distance}}{\text{Speed}}$
$= \frac{144\ \text{km}}{12\ \text{km/h}}$
= 12h

c. Time $= \frac{\text{Distance}}{\text{Speed}}$
$= \frac{330\ \text{km}}{9\ \text{km/h}}$
= 36.6 h

d. Time $= \frac{\text{Distance}}{\text{Speed}}$
$= \frac{240\ \text{km}}{6\ \text{km/h}}$
= 40 s

e. Time $= \frac{\text{Distance}}{\text{Speed}}$

$= \frac{480 \text{ km}}{8 \text{ m/s}}$

$= 60 \text{ s}$

f. Time $= \frac{\text{Distance}}{\text{Speed}}$

$= \frac{560 \text{ km}}{70 \text{ km/h}}$

$= 8 \text{ h.}$

4. **a.** Speed $= \frac{\text{Distance}}{\text{Time}}$

$= \frac{360 \text{ km}}{4 \text{ h}}$

$= 90 \text{ km/h}$

b. Speed $= \frac{\text{Distance}}{\text{Time}}$

$= \frac{250 \text{ km}}{5 \text{ h}}$

$= 50 \text{ km/h}$

c. Speed $= \frac{\text{Distance}}{\text{Time}}$

$= \frac{3 \text{ m}}{8 \text{ sec}}$

$= 3.75 \text{ m/s}$

d. Speed $= \frac{\text{Distance}}{\text{Time}}$

$= \frac{100 \text{ m}}{30 \text{ sec}}$

$= 3.33 \text{ m/s}$

e. Speed $= \frac{\text{Distance}}{\text{Time}}$

$= \frac{375 \text{ m}}{35 \text{ sec}}$

$= 10.71 \text{ m/s}$

f. Speed $= \frac{\text{Distance}}{\text{Time}}$

$= \frac{4800 \text{ m}}{24 \text{ sec}}$

$= 200$ m/s.

5. Distance = 225 km, speed = 50 km/h

Time $= \frac{\text{Distance}}{\text{Speed}}$

$= \frac{225 \text{ km}}{50 \text{ km/h}}$

= 4.5h or 4 h 30 minutes.

Truck will take 4.5 h to travel.

6. Time = 10:30 am to 12:30 pm

= 2h

Speed = 70 km/h

Distance = Speed × Time

= 140 km

The Car will trave 140 km.

7. Speed = 32 km/h

Distance = 152 km

Time $= \frac{\text{Distance}}{\text{Speed}}$

$= \frac{152 \text{ km}}{32 \text{ km/h}}$

= 4.75 h

= 4 h 75 minutes.

He takes 4 h 75 minutes to cover 152 km with cycle.

8. First case:

Distance = 2250 km, speed 50 km/h.

Time $= \frac{\text{Distance}}{\text{Speed}}$

$= \frac{2250 \text{ km}}{50 \text{ km/h}}$

= 45 h

Second Case :

Distance = 2250 km speed 75 km/h

Time $= \frac{2250 \text{ km}}{75 \text{ km/h}}$

$= 30$ h

The lorry will take 45 h – 15 h = 15 h less time to cover the same distance.

9. Time 3 h, Distance = 225 km

Speed of first Bus $= \frac{\text{Distance}}{\text{Time}}$

$= \frac{225 \text{ km}}{3 \text{ h}}$

$= 75$ km/h

Speed of another Bus = 75 km/h + 15km/h

= 90 km/h.

Time taken by another bush with same distance

$= \frac{225 \text{ km}}{90 \text{ km/h}} = 2.5\text{h}$

or 2 hours 30 minutes.

10. Distance = 270 km, Time = 8 hours

Speed $= \frac{\text{Distance}}{\text{Time}}$

$= \frac{270 \text{ km}}{8 \text{ h}}$

$= 33.75$ km/h

The speed of the car = 33.75 km/h.

11. Distance = 495 km, Time = $4\frac{1}{2}$ h = 4.5 h

Speed of the car $= \frac{\text{Distance}}{\text{Time}}$

Time $= \frac{495 \text{ km}}{4.5 \text{ h}}$

$= 110$ km/h.

12. Distance = 350 km, Time = 10 hours

Actual Time = 10 h – 3 h = 7 h

Speed of the truck $= \frac{\text{Distance}}{\text{Time}}$

$= \frac{350 \text{ km}}{7 \text{ h}}$

$= 50$ km/h.

13. Distance = 15 km, Time = 45 minute = 0.75 h.

Speed of the train $= \frac{\text{Distance}}{\text{Time}}$

$= \frac{15 \text{ km}}{0.75 \text{ h}}$

$= 20$ km/h

14. Distance = 25km, Time = 5 hours

Speed of the cycle $= \frac{\text{Distance}}{\text{Time}}$

$= \frac{25 \text{ km}}{5 \text{ h}}$

13. Distance = 360 km

Total time = 6:00 am to 2:00 pm

= 8 hours.

Stoppage time = 2hours

Actual time taken by bus = 8 h – 2 h = 6 h

Average speed of Bus $= \frac{360 \text{ km}}{8 \text{ h}}$

= 45km/h

speed of Bus $= \frac{360 \text{ km}}{6 \text{ h}}$

= 60km/h

Exercise 13 F

1. **a.** Since, 1 km/hr $= \frac{5}{18}$ m/sec

75 km/h $= \frac{75 \times 5}{18} = \frac{125}{6}$

$= \frac{125}{6} = 20\frac{5}{6}$ m/sec

b. Since, 1 km/hr. $= \frac{5}{18}$ m/sec

49 km 1 h $= \frac{49 \times 5}{18} = \frac{245}{18}$

$= 13\frac{11}{18}$ m/sec

c. Since 1 km/her $= \frac{5}{18}$ m/sec

62 km/h $= \frac{62 \times 5}{18} = \frac{310}{18}$

$= 17\frac{2}{9}$ m/sec

d. Since, 1 km/hr $= \frac{5}{18}$ m/sec

90 km/h $= \frac{90 \times 5}{18} = \frac{450}{3}$

$= 25$ m/sec

e. Since, 1 km/hr, $= \frac{5}{18}$ m/sec

185 km/h $= \frac{185 \times 5}{18}$

$= 81\frac{7}{18}$ m/sec

f. Since 1 km/hr $= \frac{5}{18}$ m/sec

220 km/hr $= \frac{220 \times 5}{18}$

$= 61\frac{1}{9}$ m/sec

g. Since, 1 km/hr. $= \frac{5}{18}$ m/sec.

74 m/hr $= 0.074$ km/hr.

0.074 km/hr. $= \frac{0.074 \times 5}{18} = \frac{0.37}{18}$

$= \frac{37}{1800}$ m/sec

h. Since, 1 km/hr $= \frac{5}{18}$ m/sec

90 km/hr. $= \frac{^{5}\cancel{10}\,90 \times 5}{\cancel{18}_{\cancel{2}}}$

$= 25$ m/sec

i. Since 1 km/hr. $= \frac{5}{18}$ m/sec

126 km/hr. $= \frac{^{7}\cancel{42}\,\cancel{16} \times 5}{\cancel{18}_{\cancel{6}}}$

$= 35$ m/sec

j Since 1 km/hr $= \frac{5}{18}$ m/sec

196 m/hr $= 0.196$ km/hr

0.198 km/hr $= \frac{0.196 \times 5}{18} = \frac{0.98}{18}$

$= \frac{98}{1800}$ m/sec

k. Since a 1 km/hr $= \frac{5}{18}$ m/sec

45 km/hr $= \frac{45 \times 5}{18} = \frac{25}{2}$

$= 12\frac{1}{2}$ m/sec

l. Since, 1 km/hr $= \frac{5}{18}$ m/sec

196 km/hr $= \frac{196 \times 5}{18} = \frac{490}{9}$

$= 54\frac{4}{9}$ m/sec

m. Since, 1 km/h $= \frac{5}{18}$ m/sec

0.125 km/hr $= \frac{0.125 \times 5}{18} = \frac{0.625}{18}$

$= \frac{625}{18000}$ m/sec

n. Since 1km /hr. $= \frac{5}{18}$ m/sec

30 km/hr $= \frac{^{5}\cancel{30} \times 5}{\cancel{18}_{3}} = \frac{25}{3}$

$= 8\frac{1}{3}$ km/h

o. Since, 1 km/hr. $= \frac{5}{18}$ m/sec

135 km/h $= \frac{^{16}\cancel{135} \times 5}{\cancel{18}_{2}} = \frac{75}{2}$

$= 37\frac{1}{2}$ m/sec

2. **a.** Since 1m/sec $= \frac{18}{5}$ km/h

68 m/sec $= \frac{68 \times 18}{5}$

$= 244\frac{4}{5}$ km/h

b. Since, 1 m/sec $= \frac{18}{5}$ km/h

42m/sec $= \frac{42 \times 18}{5} = \frac{756}{5}$

$= 151\frac{1}{5}$ km/h

c. Since, 1 m/sec $= \frac{18}{5}$ km/h

79 m/sect $= \frac{79 \times 18}{5} = \frac{1422}{5}$

$= 284\frac{2}{5}$ km/h

d. Since, 1 m/sec $= \frac{18}{5}$ km/h

102 m/sec $= \frac{102 \times 18}{5} = \frac{1836}{5}$

$= 367\frac{1}{5}$ km/h

e. Since, 1 m/sec $= \frac{18}{5}$ km/h

137 m/sec $= \frac{137 \times 18}{5} = \frac{2466}{5}$

$= 493\frac{1}{5}$ km/h

f. If since 1 m/sec $= \frac{18}{5}$ km/h

145 m/sec $= \frac{^{29}\cancel{145} \times 18}{\cancel{5}}$

$= 522$ km/h

g. Since , 1 m/see $= \frac{18}{5}$ km/h

90 m/sec $= \frac{^{18}\cancel{90} \times 18}{\cancel{5}}$

$= 329$ km/h

h. Since , 1 m/see $= \frac{18}{5}$ km/h

180 m/sec $= \frac{^{36}\cancel{180} \times 18}{\cancel{5}}$

$= 648$ km/h

i. Since , 1 m/see $= \frac{18}{5}$ km/h

95 m/sec $= \frac{18 \times \cancel{95}^{19}}{\cancel{5}}$

$= 342$ km/h

j. Since , 1 m/see $= \frac{18}{5}$ km/h

125 m/sec $= \frac{^{25}\cancel{125} \times 18}{\cancel{5}}$

$= 450$ km/h

k. Since , 1 m/see $= \frac{18}{5}$ km/h

130 m/sec $= \frac{^{26}\cancel{130} \times 18}{\cancel{5}}$

$= 468$ km/h

l. Since , 1 m/see $= \frac{18}{5}$ km/h

25m/sec $= \frac{^{5}\cancel{25} \times 18}{\cancel{5}}$

$= 90$ km/h

m. Since , 1 m/see $= \frac{18}{5}$ km/h

45 km/h $= \frac{^{9}\cancel{45} \times 18}{\cancel{5}}$

$= 162$ km/h.

n. Since , 1 m/see $= \frac{18}{5}$ km/h

70 m/sec $= \frac{^{14}\cancel{70} \times 18}{\cancel{5}}$

$= 252$ km/h

o. Since , 1 m/see $= \frac{18}{5}$ km/h

120 m/sec $= \frac{^{24}\cancel{120} \times 18}{\cancel{5}}$

$= 432$ km/h

HOTS

1. Speed in m/sec. $= 25$ m/sec

speed in m/sec $= \frac{18}{5}$ km/h

25m/sec $= \frac{^{5}\cancel{25} \times 18}{\cancel{5}}$ km/h

$= 90$ km/h

2. Distance = 900 m, Time = 5 minutes.

$= 5 \times 60 = 300$ sec

Speed $= \frac{900 \text{ m}}{300 \text{ sec}} = 3$ m/sec

3. Distance = 310 km, Time = 5 hours

$= 310 \times 1000$

$= 310000$ m

$= 5 \times 60 \times 60$

$= 18000$ sec

Speed of the car in m/sec $= \frac{310\cancel{0000}\text{ m}}{18\cancel{0000}\text{ sec}}$

$= \frac{310}{18}$

$= 17\frac{2}{9}$ m/sec

Mental Maths

1. Distance = Speed × Time

Ans. Option (c) Time

2. If D = 500 m, T = 20 sec , S = ____

Ans. Option (b) 25m/sec

3. 36 sec = $\frac{1}{100}$ hour.

Ans. Option (c) $\frac{1}{100}$

4. To convert km/h. We multiply by

Ans. Option (c) $\frac{5}{18}$

5. To convert m/sec into km/hr, we to multiply by

Ans. Option (c) $\frac{18}{5}$

6. 1 km/h = $\frac{5}{18}$ m/sec

Ans. Option (a) $\frac{5}{18}$

Chapter
14

XXXXX

Exercise 14 A

1. **a.** The perimeter of the triangle = 10 cm + 11 cm + 9 cm
= 30cm.

b. The perimeter of the polygon = 8 cm + 8 cm + 8 cm + 8 cm
= 32 cm.

c. The perimeter of the rectangle = 5 cm + 18 cm
= 46 cm

d. The perimeter of the triangle = 70 cm + 8 cm + 6 cm
= 21cm

e. The perimeter of the polygon = 15 cm + 5 cm + 10 cm + 5 cm
+ 5 cm + 10 cm
= 50 cm.

2. **a.** Perimeter of the rectangle = 2(7 cm + 3 cm)
= 20 cm

b. Perimeter of Polygon = 2 cm + 2 cm + 3 cm + 2 cm + 2 cm
+ 3 cm + 2 cm + 2 cm + 3 cm + 2 cm
+ 3 cm + 2 cm + 2 cm + 3cm
= 28 cm.

c. Perimeter of polygon = 3 cm + 3 cm + 3 cm + 2 cm.
1 cm + 7 cm + 1 cm + 2 cm
= 22 cm

d. Perimeter of polygon = 2 cm + 3 cm + 3 cm + 2 cm + 3 cm
+ 3 cm + 2 cm + 8 cm
= 20 cm

e. Perimeter of polygon = 2 cm + 3 cm + 4 cm + 2 cm
6 cm + 5 cm
= 22 cm

f. Perimeter of polygon = 2 cm + 2 cm + 2 cm + 2 cm + 2 cm
+ 2 cm + 2 cm + 2 cm + 2 cm + 2 cm
+ 5 cm + 5 cm
= 30 cm

3. **a.** Perimeter of Rectangle = $2(L + B)$
$= 2(35 + 4)$ cm = 78 cm

b. Perimeter of Rectangle = $2(L + B)$
$= 2(4.5 + 2)$ m = 13m

c. Perimeter of Rectangle = $2(L + B)$
$= 2(6.5 + 3)$ m
$= 2(9.5)$ m
= 19 cm

d. Perimeter of Rectangle = $2(L + B)$
$= 2(15 + 12)$
$= 2(27)$ m
= 54 m

e. Perimeter of Rectangle = $(l + b)$
$= 2(2.25 + 1.5)$ km
$= 2(3.75)$ km
= 7.5 km

f. Perimeter of Rectangle = $2(l + b)$
$= 2(65 + 40)$ cm
$= 2(105)$ cm
= 210 cm

4. **a.** Perimeter of square = 4 × side
$= 4 \times 12$ cm
= 48 cm

b. Perimeter of square = 4 × side
$= 4 \times 7.2$ cm
= 28.8 cm

c. Perimeter of square = 4 × side
$= 4 \times 8.2$ cm
= 32.8 cm

d. Perimeter of square = 4 × side
$= 4 \times 135$ m
= 540 cm.

e. Perimeter of square = 4 × side
$= 4 \times 6.5$ cm
= 26 cm

f. Perimeter of square = 4 × side
= 4 × 18 cm
= 72 cm

g. Perimeter of square = 4 × side
= 4 × 9.2 cm
= 36.8 cm

h. Perimeter of square = 4 × side
= 4 × 20 m
= 80 m

5. **a.** Perimeter of an equilateral triangle = 3 × side
= 3 × 7 cm
= 21 cm

b. Perimeter of an equilateral triangle = 2(sides) + side^2
= 2(5.8) + 7.5 cm
= 11.6 + 7.5 cm
= 19.1 cm

c. Perimeter of Rectangle = 2 (l + b)
= 2(7 + 5)
= 2(12) m
= 24m

d. Perimeter of a pentagon with equal sides = 5 × sides
= 5 × 4.3 cm
= 21.5 cm

e. Perimeter of a Rectangle = 2(l + b)
= 2(12.6 + 9.4) cm
= 2(22) cm
= 44 cm

f. Perimeter of a square = 4 × side
= 4 × 6 cm
= 24 cm

6. **a.** Perimeter of a triangle = 21.7 cm
Sum of two sides = 4.5 cm + 9.5 cm
Side = Perimeter of triangle – sum of two sides
= 21.7 cm – 14 cm
= 7.7 cm

b. Perimeter of an equilateral triangle = 23 cm

Sum of two equal sides = 9 cm + 9 cm

= 18 cm

Side Perimeter of equilateral triangle

– Sum of two equal sides

= 23 cm – 18 cm = 30 cm

c. Perimeter of square = 4 × side

side = $\frac{1}{4}$ × perimeter

side = $\frac{1}{\cancel{4}} \cancel{44}^{11}$ cm

side = 11cm

d. Perimeter of a rectangle = 48cm

Sum of both breadth = 6.6 cm + 6.6 cm = 13.2 cm

Sum of both length = 48 cm – 13.2 cm = 34.8

Since of posite side of a rectangular are equal.

So, perimeter = 48 cm sum of both length are equal in length.

Length of a side = half of 34.8 cm

= $\frac{1}{2}$ × 34.8 cm = 17.4 cm

e. Perimeter of a hexagon = 6 × side.

Side = $\frac{1}{6}$ × perimeter

= $\frac{1}{\cancel{6}} \times \cancel{54}^{9}$

Side = 9 cm

Exercise 14 B

1. **a.** The given shape covers 6 whole squares and 6 half squares.

Area of 6 whole squares = 6 sq units

6 half squares = 3 sq. units

The area of the given shape = 6 sq. units + 3 sq. units.

= 9 sq. units.

b. The shape covers 9 whole squares and 6 half squares.

Area of whole squares = 9 sq. units

6 half squares = 3 sq. units.

The area of the given shape = 9 sq. units + 3 sq. units.

= 12 sq. units.

c. The shape covers 9 whole squares and 4 half squares.

Area of 9 whole squares = 9 sq. units

44 half squares = 2 sq. units.

The area of the given shape = 9 sq. units + 2 sq. units.

= 11 sq. units.

d. The shape covers 14 whole squares and 5 half squares.

Area of 14 whole squares = 14 sq. units

5 more than half squares = 5 sq. units.

The area of the given shape = 14 sq. units + 5 sq. units.

= 19 sq. units.

2. **a.** The given shape covers 11 whole squares and 6 more than half squares that is, 6 squares

The area of the given shape = 11 sq. units + 6 sq. units

= 17 sq. units

The area of the given shape is approximately 17 sq units

b. The given shape covers 10 whole squares and 6 more than half squares, that is, 6 squares.

The area of given shape = 10 sq. units + 6 sq. units.

= 16 sq. units

The area of the given shape is approximately 16 sq. units.

c. The given shape covers 7 whole squares and 9 more than half squares, that is, 9 squares.

The area of given shape = 7 sq. units + 9 sq. units.

= 16 sq. units

The area of the given shape is approximately 16 sq. units.

d. The given shape covers 2 whole squares and 6 more than half squares, that is, 6 squares.

The area of given shape = 2 sq. units + 6 sq. units.

= 8 sq. units

The area of the given shape is approximately 8 sq. units.

3. **a.** Area of rectangle = $l \times b$

$= 18 \text{ cm} \times 12 \text{ cm}$

$= 216 \text{ cm}^2$

c. Area of rectangle = $l \times b$
= 14 m × 9 m
= 126 m^2

d. Area of rectangle = $l \times b$
= 1.8 cm × 80 cm
= 144 cm

e. Area of rectangle = $l \times b$
= 27.5 cm × 16 cm
= 440 cm^2

f. Area of rectangle = $l \times b$
= 30 cm × 20.2 cm
= 606 cm^2

4. a. Area of square = side × side
= 17 cm × 17 cm
= 289 cm^2

b. Area of square = side × side
= 23 cm × 23 cm
= 529 cm^2

c. Area of square = side × side
= 13.5
= 182.25 cm^2

d. Area of square = side × side
= 340 cm × 340 cm
= 115600 cm^2 or
= 1156 cm^2

e. Area of square = side × side
= 1.9 m × 1.9 m
= 3.61 cm^2

f. Area of square = side × side
= 2.5 m × 2.5 m
= 625 cm^2

g. Area of square = side × side
= 12 m × 12 m
= 144 cm^2

h. Area of square = side × side

$= 100 \text{ cm} \times 100 \text{ cm}$

$= 10000 \text{ cm}^2$

5. **a.** Area of rectangle = length × breadth

$104 \text{ cm}^2 = \text{length} \times 8 \text{ cm}$

$$\text{length} = \frac{104}{8}$$

$\text{length} = 13 \text{ cm}$

b. Area of rectangle = length × breadth

$378 \text{ cm}^2 = \text{length} \times 14 \text{ cm}$

$$\text{length} = \frac{378}{14}$$

$\text{length} = 27 \text{ cm}$

c. Area of rectangle = length × breadth

$102 \text{ m}^2 = \text{length} \times 8.5 \text{ cm}$

$$\text{length} = \frac{102}{8.5}$$

$\text{length} = 12 \text{ m}$

d. Area of rectangle = length × breadth

$80 \text{ cm}^2 = \text{length} \times 10 \text{ cm}$

$$\text{length} = \frac{80}{10}$$

$\text{length} = 8 \text{ cm}$

6. **a.** Area of rectangle = length × breadth

$391 \text{ cm}^2 = 23 \text{ cm} \times \text{breadth}$

$$\text{breadth} = \frac{391}{23}$$

$\text{breadth} = 17 \text{ cm}$

b. Area of rectangle = length × breadth

$117 \text{ m}^2 = 13 \text{ m} \times \text{breadth}$

$$\text{breadth} = \frac{117}{13}$$

$\text{breadth} = 9 \text{ m}$

c. Area of rectangle = length × breadth

$52\ m^2 = 8\ m \times \text{breadth}$

$$\text{breadth} = \frac{52}{8}$$

$\text{breadth} = 6.5\ m$

d. Area of rectangle = length × breadth

$240\ cm^2 = 12\ m \times \text{breadth}$

$$\text{breadth} = \frac{240}{12}$$

$\text{breadth} = 12\ m$

7. **a.** Area of a square = side × side

$100\ cm^2 = side^2$

$side = \sqrt{100}$

$= 10\ cm$

b. Area of a square = side × side

$81\ cm^2 = side^2$

$side = \sqrt{81}$

$= 9\ cm$

c. Area of a square = side × side

$144\ m^2 = side^2$

$side = \sqrt{144}$

$= 12\ cm$

d. Area of a square = side × side

$225\ cm^2 = side^2$

$side = \sqrt{225}$

$= 15\ cm$

8. **a.** Area of a rectangle = $l \times b$

$= (6 \times 9)\ cm$

$= 54\ cm^2$

b. Area of a rectangle = $l \times b$

$= (5 \times 2)\ cm$

$= 10\ cm^2$

c. Area of a square = side × side

$= (5 \times 5)\ cm$

$= 25\ cm^2$

Exercise 14 B

Exercise 14 D

1. **a.** The volume of a rectangular box or cuboid = Length × Breadth × Height .

b. The volume of a cube = side × side × side

c. The volume of a cube with 1 cm is $1\ cm^3$

2. **a.** Volume of the figure = Total number of unit cube
= 16 cu. cm

b. Volume of the figure = Total number of unit cube
= 6 cu. cm

c. Volume of the figure = Total number of unit cubes
= 12 cu. cm

d. Volume of the figure = Total number of unit cubes
= 13 cu. cm

e. Volume of the figure = Total number of unit cube
= 18 cu cm

3. **a.** Volume of a cuboid = $l \times b \times h$
= 16 cm × 12 cm × 8 cm
= 1,536 cu.cm

b. Volume of a cuboid = $l \times b \times h$
= 14 cm × 8 cm × 2.5 cm
= 280 cu. m

c. Volume of a cuboid = $l \times b \times h$
= 12.5 cm × 7.8 cm × 6 cm
= 585 cu. m

d. Volume of a cuboid = $l \times b \times h$
= 4.8 m × 3.5 m × 0.75 m
= 12.6 cu. m

e. Volume of a cuboid = $l \times b \times h$
= 23 cm × 14 cm × 10 cm
= 3.220 cu. m

f. Volume of a cuboid = $l \times b \times h$
= 9 mm × 7 mm × 5 mm
= 315 cu. mm

g. Volume of a cuboid = $l \times b \times h$
= 11.5 cm × 7.8 cm × 6 cm
= 585 cu. m

h. Volume of a cuboid = $l \times b \times h$
= 7.4 cm × 6.2 cm × 5.2 cm
= 740 cm × 620 cm × 5.2 cm
= 2.385, 760 cu. m

i. Volume of a cuboid = $l \times b \times h$
= 7.3 m × 5.1 m × 4 cm
= 730 cm × 510 cm × 4 cm
= 1,489.200 cu. m

j. Volume of a cuboid = $l \times b \times h$
= 54 cm × 45 cm × 8 cm
= 19,440 cu. cm

4. a. Volume of cube = side × side × side
= 14 × 14 × 14
= 2,744 cu.cm

b. Volume of cube = side × side × side
= 3.5 × 3.5 × 3.5
= 42.875 cu.cm

c. Volume of cube = side × side × side
= 64 cm × 64 cm × 64 cm
= 262,144 cu.cm

d. Volume of cube = side × side × side
= 6.9 cm × 6.9 cm × 6.9 cm
= 328.509 cu.cm

e. Volume of cube = side × side × side
= 13 m × 13 m × 13 m
= 2,197 cu.cm

f. Volume of cube = side × side × side
= 12.5 cm × 12.5 cm × 12.5 cm
= 1933.125 cu.cm

g. Volume of cube = side × side × side
= 14 cm × 14 cm × 14 cm
= 2,744 cu.cm

h. Volume of cube = side × side × side
= 7.5 cm × 7.5 cm × 7.5 cm
= 421.875 cu.cm

Exercise 14 e

1. **a.** Perimeter of a square = 4 × side
Perimeter of a square = 4 × 95 m
= 380 m
3 times of its perimeter = 380 × 3
= 1,140 m
= 1 km 140 m
Tanri runs 1 km 140 m of distance.

b. Perimeter of the fence around Square field
= 308 m.
Perimeter of Square = 4 × side
308 = 4 × side
Side = $\frac{308}{4}$
Side = 77 m

c. Area perimeter of the carpet = 4m × 2.5 m
= 10 m^2
The floor is completely covered by 26 carpet.
Area of the floor = 10 m × 26
= 260 m^2

d. Perimeter of rectangle = 50 cm.

length of rectangle = 15 cm

Perimeter of rectangle = $2(l + b)$

Breadth = $\frac{\text{Perimeter}}{2} - l$

B = $\frac{50}{2} - 15$

B = 10 cm

Area of rectangle = $l \times b$

= 15 × 10

= 150 cm^2

e. Perimeter of rectangular pool = 56 m

length of the pool = 16 m

width of the pool = $\frac{\text{Perimeter}}{2} - l$

= $\frac{56}{2} - 16$

= 12 m

f. Area of rectangle = 540 cm^2

Length of rectangle = 36

Breadth of rectangle = $\frac{\text{area}}{\text{length}}$

= $\frac{540}{36}$

= 15 cm

g. Volume of a cuboid = l x b x h

= 20 cm × 15 cm × 10 cm

= 3000 cm^3

h. Volume of the wall = l x b x h

= 8 m × 3 m × 5 m

= 120 m^2

i. Volume of the box = 10 cm × 8 cm × 5 cm

= 400 cm^3

Volume of the cartoon = 100 cm × 72 cm × 50 cm

= 360,000 cm^3

No. of boxes packed in a cartoon

$$= \frac{360,000}{400}$$

$= 900$

900 boxes can be packed in the cartoon.

j. Volume of the room $= l \times b \times h$

$= 6 \text{ m} \times 5 \text{ m} \times 3 \text{ m}$

$= 90 \text{ m}^3$

k. Volume of the fond $= l \times b \times h$

$= 50 \times 30 \times 2$

$= 3,000 \text{ cm}^3$

l. Area of the painting $= l \times b$

$= 3.5 \text{ m} \times 1.5 \text{ m}$

$= 5.25 \text{ m}^2$

m. Area of the stamp $= l \times b$

$= 3.3 \text{ cm} \times \text{l. } 6 \text{ cm}$

$= 5.28 \text{ cm}^2$

n. Area of piece of a cloth $= l \times b$

$= 8 \text{ m} \times 4 \text{ m}$

$= 32 \text{ m}^2$

o. Area of square pillow $=$ side $\times$ side

$= 52 \text{ cm} \times 52 \text{ cm}$

$= 2,704 \text{ cm}^2$

p. Area of rectangular sheet $= l \times b$

$= 28 \text{ cm} \times 15 \text{ cm}$

$= 420 \text{ cm}^2$

q. Area of square sheet $=$ side $\times$ side

$= 125 \text{ cm} \times 125 \text{ cm}$

$= 15,625 \text{ cm}^2$

$= 1 \text{ m}^2 56 \text{ cm}^2$

r. Volume of the box $= l \times b \times h$

$= 50 \text{ cm} \times 30 \text{ cm} \times 20 \text{ cm}$

$= 30,000 \text{ cm}^3$

30,000 cu. cm of rice can be filled in the box.

s. Volume of the brick $= l \times b \times h$

$= 20 \text{ cm} \times 12 \text{ cm} \times 15 \text{ cm}$

$= 1{,}200 \text{ cm}^3$

t. Volume of Almirah $= l \times b \times h$

$= 90 \text{ cm} \times 50 \text{ cm} \times 35 \text{ cm}$

$= 157{,}500 \text{ cm}^3$

u. The edge of a cube $= 10.5 \text{ cm}$

Volume of cube $=$ side $\times$ side $\times$ side

$= 10.5 \text{ cm} \times 10.5 \text{ cm} \times 10.5 \text{ cm}$

$= 1{,}157.625 \text{ cm}^3$

HOTS

1. The Perimeter of the given polygon

$= AB + BC + CD + DE + EF + FA$

$= 5 \text{ cm} + 4 \text{ cm} + 6 \text{ cm} + 4 \text{ cm} + 3 \text{ cm} + 7 \text{ cm}$

$= 29 \text{ cm}$

2. Perimeter of a square $= 4 \times$ side $= 55 \text{ cm}$

Side of the square $= \frac{55}{4} = 13.75 \text{ cm}$

Area of the square $=$ side $\times$ side

$= 189.06 \text{ cm}^2$

3. Volume of cuboid $= 9 \text{ cm} \times 5 \text{ cm} \times 4 \text{ cm}$

$= 180 \text{ cm}^3$

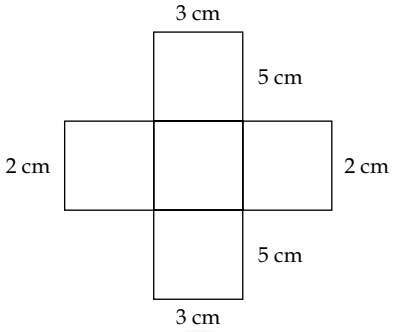
Volume one of cube $=$ side $\times$ side $\times$ side

$= 5 \text{ cm} \times 5 \text{ cm} \times 5 \text{ cm}$

$= 125 \text{ cm}^3$

Cuboid has greater volume.

4. **a.** Let give name to the part of figures. A, B, C, D, and E



The length and breadth of figure A and C is same.

Area of rectangle A and C $= 2 \times (l \times b)$

$= 2 \times (3 \times 5)$

$= 2 \times (15)$

$= 30 \text{ cm}^2$

The length and breadth of figure B and D is same.

Area of Rectangle B and D $= 2 \times (l \times b)$

$= 2 \times (2 \times 5)$

$= 2 \times (10)$

$= 20 \text{ cm}^2$

Area of rectangle E $= l \times b$

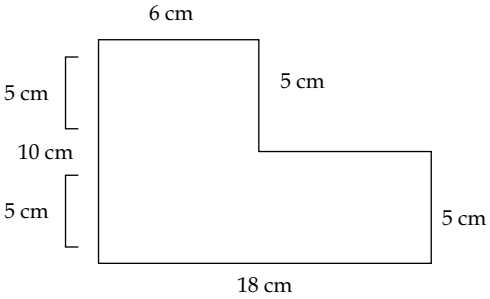
$= 3 \times 2$

$= 6 \text{ cm}^2$

Total area of the figure $= 30 \text{ cm}^2 + 20 \text{ cm}^2 + 6 \text{ cm}^2$

$= 56 \text{ cm}^2$

b. Let give name to the parts of figure. A and B



Area Rectangle A $= l \times b$

$= 6 \times 5$

$= 30 \text{ cm}^2$

Area of Rectangle B $= l \times b$

$= 5 \times 18$

$= 90 \text{ cm}^2$

Total area of the figure $= 30 \text{ cm}^2 + 90 \text{ cm}^2$

$= 120 \text{ cm}^2$

5. To make 3 steps $= 6$ blocks

$= 1 + 2 + 3 = 6$

To make 6 Steps $= 1 + 2 + 3 + 4 + 5 + 6 = 21$ blocks

21 blocks will be needed to a staircase of 6 steps.

Mental Maths

a. 25 = 5

b. 64 = 8

c. 9 = 3

d. 36 = 6

Chapter
15

Geometry

Exercise 15 A

1. **a.** A Ray has <u>one</u> end point.

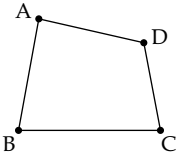
b. A line has <u>two</u> end point.

c. Perpendicular lines make an angle of <u>90°</u>.

d. A ray has no <u>definite</u> length.

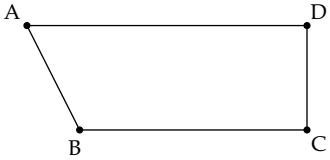
e. A line segment has a <u>definite</u> length.

2. **a.**



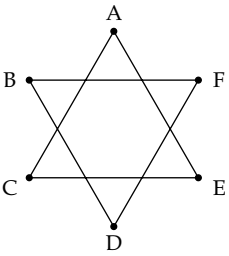
There are 4 segments there $\overline{AB}, \overline{AC}, \overline{CD}, \overline{BD}$

b.



There are 4 tine segments $\overrightarrow{AB}, \overrightarrow{BC}, \overrightarrow{CD}, \overrightarrow{DA}$

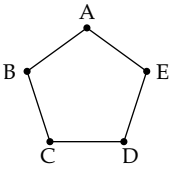
c.



There are 6 line segments.

$\overrightarrow{AC}, \overrightarrow{CE}, \overrightarrow{EA}, \overrightarrow{BF}, \overrightarrow{BD}, \overrightarrow{DF}$

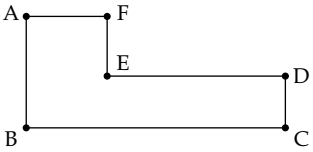
d.



There are 5 line segments

$\overrightarrow{AB}, \overrightarrow{BC}, \overrightarrow{CD}, \overrightarrow{DE}, \overrightarrow{EA}$

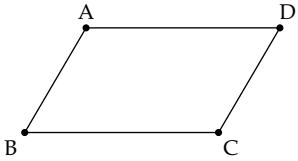
e.



There are 6 line segments.

$\overrightarrow{AB}, \overrightarrow{BC}, \overrightarrow{CD}, \overrightarrow{DE}, \overrightarrow{EF}$

f.



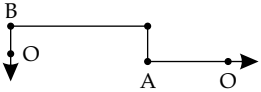
There are 4 line segments.

$\overrightarrow{AB}, \overrightarrow{BC}, \overrightarrow{CD}, \overrightarrow{DA}$

3. a.

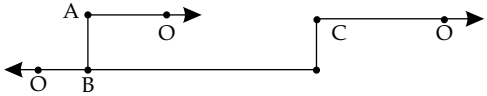
There only one ray $\overrightarrow{OB}$.

b.



There are two rays $\overrightarrow{OB}, \overrightarrow{OA}$

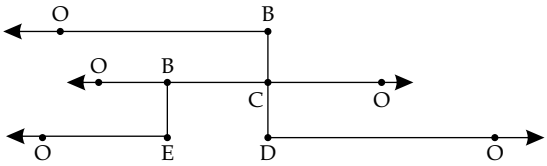
c.



There are three rays in this figure.

$\overrightarrow{OA}, \overrightarrow{OB}, \overrightarrow{OC}$

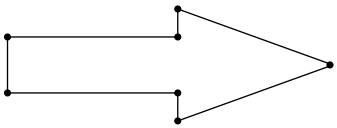
d.



There are five rays in this figure.

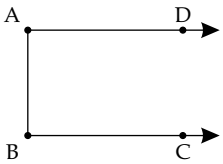
$\overrightarrow{OA}, \overrightarrow{OB}, \overrightarrow{OC}, \overrightarrow{OD}, \overrightarrow{OE}$

e.



There is no ray is this figure.

f.



There are two ray in this figure.

$\overrightarrow{AB}, \overrightarrow{BC}$

Exercise 15 B

1. **a.** When two rays form an angle, their common end point is called the vertex of the angle.

b. Angles are measured in degree.

c. Angles are measured with the help of a protractor.

d. The measure of a right angle is 90°.

e. the measure of a straight is 180°.

f. an angle of 90° is called right angle.

g. TWO right angles form one straight angle

h. one complete angle is equal to four sight angles.

2. **a.** It is smaller than 90° so it is acute angle.

b. It is smaller than 90° so it is acute angel.

c. It is obtuse angle because it is greater than 90°.

d. It is right angle because it is equal to 90°.

5. **a.** It is acute angle because it is smaller than 90°.

b. It is zero angle.

c. It right angle because it is equal to 90°.

d. It is obtuse angle because is greater than 90°.

e. It is straight angle.

f. It in reflen angle because it is greater than 180°.

g. It is complete angle.

Exercise 15 C

1. **a.** If A and B are two points on circle, then is called a _____ .

b. A line segment passing through the centre of a circle with its end points on the circle is a _____ of the line.

c. A diameter is the _____ chord of the circle

d. Perimeter of a circle is called its _____ .

e. Radius of a circle is _____ the length of the diameters of the circle.

f. Circumference of a circle =

g. Diameter of a circle = _____ × Radius of the circle.

h. Any part of a circle is called _____ .

2. **a.** Radius = 6cm

Circumference = $2\pi r$

$= 2 \times \frac{22}{7} \times 6$

$= \frac{264}{7}$

$= 37.71$

b. Radius = 8 cm

Circumference = $2\pi r$

$= 2 \times \frac{22}{7} \times 8$

$= \frac{352}{7} = 50.28$

c. Radius = 4.5

Circumference = $2\pi r$

$= 2 \times \frac{22}{7 \times 10} \times 4,5$

$= \frac{1980}{70} = 28.28$

d. Radius = 6.5 cm

Circumferences = $2\pi r$

$= 2 \times \frac{22}{7 \times 10} \times 6,5$

$= \frac{2860}{70} = 40.85$

e. Radius = 8.9

Circumference = $2\pi r$

$= 2 \times \frac{22}{7 \times 10} \times 8,9$

$= \frac{3916}{70} = 55.94$

f. Radius = 10.1 cm

Circumference = $2\pi r$

$= 2 \times \frac{22}{7 \times 10} \times 10,1$

$= \frac{4444}{70} = 63.48$

3. **a.** Circumference = 79.2

Radius = $\frac{C}{2\pi}$

$= \frac{\overset{11}{\cancel{22}}}{\cancel{2} \times 3.14} = 3.50$ cm

b. Circumference = 17.6

Radius = $\frac{C}{2\pi}$

$= \frac{17.6}{2 \times 3.14}$

$= \frac{17.6}{6.28}$

= 5.60 cm

c. Circumference = 30.8

Radius = $\frac{C}{2\pi}$

$= \frac{30.8}{2 \times 3.14}$

$= \frac{30.8}{6.20}$

= 4.96

d. Circumference = 79.2

Radius = $\frac{C}{2\pi}$

$= \frac{79.2}{2 \times 3.14}$

$= \frac{79.2}{6.28}$

= 12.61 cm

e. Circumference = 50.5 cm

$$\text{Radius} = \frac{C}{2\pi}$$

$$= \frac{50.5}{2 \times 3.14}$$

$$= \frac{50.5}{6.28}$$

= 8.04 cm

f. Circumference = 66.6

$$\text{Radius} = \frac{C}{2\pi}$$

$$= \frac{66.6}{2 \times 3.14}$$

$$= \frac{66.6}{6.28}$$

= 10.60 cm

Exercise 15 D

1. **a.** A triangle is formed by joing three end points.

b. A triangle has three sides and three angles.

c. The side of a scalene triangle are of unequal lengths.

d. The sum of any two sides of a triangle is greater than the third side.

e. The sum of the angles of a triangle is 180° .

f. One angle of a light angle triangle measures 90° .

g. If one angle of a triangle measures 120°, it is angle obtuse angled.

h. One acute angle of aright triangle is 35°. The other acute angle is 55° .

i. Two angles of a triangle are 35° and 65°. The third angle is 80° .

j. In ΔABC, it is given that AB = Ac then $\angle B = \angle C$.

20. **a.** It is acute-angled triangle because all the angles is the triangles are acute.

b. Right angled triangle because one of the three angle of a triangle is a right angle.

c. Scalene triangle because all the sides of triangle core unequal.

d. Obtuse-angled triangle because one of the three angles of the triangle is an obtuse e angle.

e. Right angled triangle because one of the three angles of the triangle is a right angle.

f. Acute-angled triangle because all the angles in the triangle are acute.

3. Sum of three angles of a triangle = 180°

a. $A + B + \angle C = 180°$

$90° + 27° + \angle C = 180°$

$117 + \angle C = 180°$

$\angle C = 180° - 117°$

$= 63°$

b. $120° + 32° + \angle C = 180°$

$152° + \angle C = 180°$

$\angle C = 180° - 152° = 28°$

c. $81° + 44° + \angle C = 180°$

$125° + \angle C = 180°$

$\angle C = 180° - 125°$

$= 55°$

d. $55° + 100° + \angle C = 180°$

$155° + \angle C = 180°$

$\angle C = 25°$.

e. $135° + 18° + \angle C = 180°$

$153° + \angle C = 180°$

$\angle C = 180° - 153° = 27°$

4. **a.** $60° + 60° + 60° = 180° \rightarrow$ possible

b. $120° + 30° + 30° = 180° \rightarrow$ possible

c. $50° + 30° + 90° = 170° \rightarrow$ not possible

d. $110° + 100° + 40° = 250° \rightarrow$ not possible

e. $90° + 45° + 45° = 180° \rightarrow$ possible

f. $45° + 60° + 60° = 165° \rightarrow$ not possible

5. First angle = 60°

Sum of two angled = 180° – 60° = 120

One of them = * = 60°.

6. The sum of two angles = 140°

Third angles = 180° – 140° = 40°

7. In this triangle there is a angle of 90°.

According to question

$\angle A = \angle B$

$\angle A = \angle A$

$= \angle 2A$

the sum of two angles = 180° – 90° = 90°

measure of each angles = $\angle 2A = 90°$

$\angle A = *$

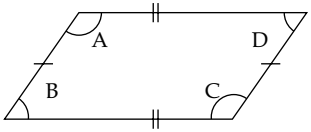
$\angle A = 45°$

$\therefore \angle A = \angle B$

$\because \angle B = 45°$

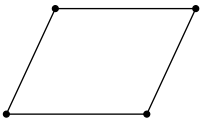
Exercise 15 E

1. **a.**



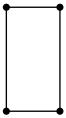
Parallelogram because it has two equal and parallel sides.

b.



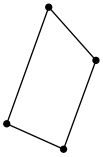
Rhombus because it's all four sides are equal and the opposite sides are parallel.

c.



Rectangle because the opposite sides are equal and parallel.

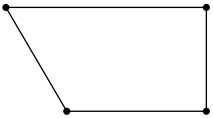
d.



Rhombus because it's all four sides are equal and opposite side are parallel.

e. 

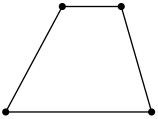
Rectangle because it's opposite sides are equal and parallel

f. 

Trapezium because it's one pair of opposite sides is parallel.

g. 

Square because it's all four angles are right angles and both the diagonals are equal.

h. 

Trapezium because it's one pair of opposite sides is parallel.

2. **a.** The word 'quad' stands for <u>four</u> .

b. A quadrilateral has <u>four</u> sides and <u>four</u> vertex.

c. A quadrilateral which have two pairs of equal and parallel sides, and the opposite angles are equal is called a <u>parallelogram</u>.

e. The opposite sides of rectangle are <u>equal</u> and <u>parallel</u>.

f. The <u>opposite</u> angles of a rhombus are equal to each other.

g. Both the diagonals of a square are <u>equal</u> .

3. **a.** A trapezium is a polygon. T

b. All squares are rectangle. T

c. A parallelogram is a rectangle. F

d. Every square is a rhombus. F

e. All sides of a trapezium are equal. F

f. The opposite sides of a trapezium are parallel. F

Chapter
17

XXXXX

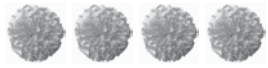
Exercise 17 A

1. a.

Name of the objects	*Number of the objects*
Chair	
Bed	
Cupboard	
Table	

Where 1 pic = 1 object.

b.

Name of flowers	*Number of the flowers*
Rose	
Marigold	
Lily	
Jasmine	

Where 1 flower = 50 flowers.

2. a.

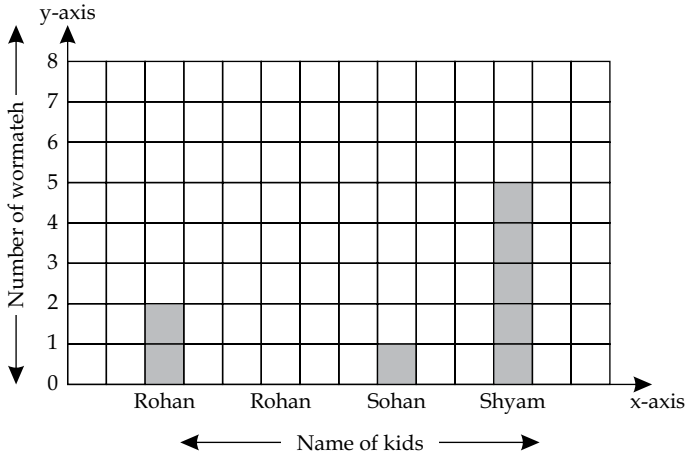
Score of cricket Batsman	*Tally marks*	*Frequency*
0	𝍸 𝍸 𝍸	15
1	𝍸 𝍸 ||	12
2	||	2
3	|	1
4	||||	4
6	||	2

b.

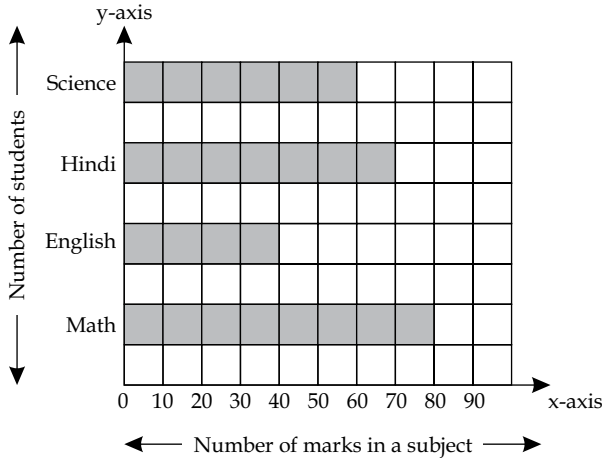
Marks of students	*Tally marks*	*Frequency*
20	||||	4
21	|||	3
22	𝍸	5
23	𝍸	6
24	||||	5
25	||	2

Exercise 17 B

1. a.



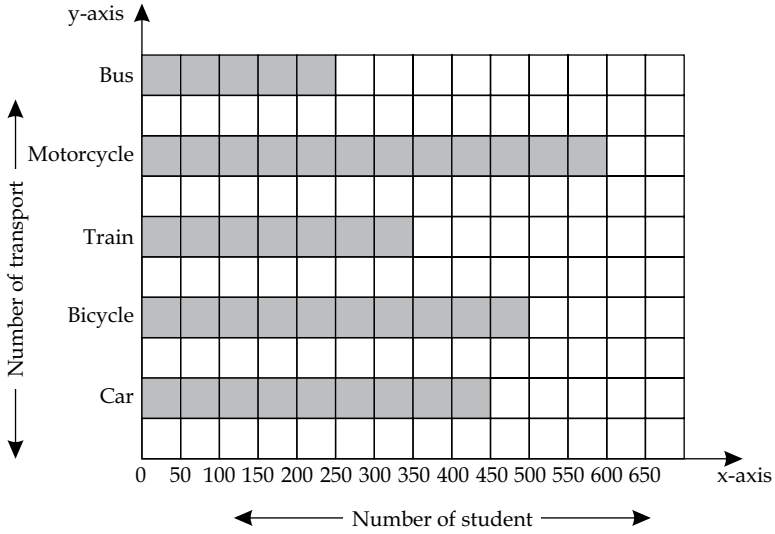
b.



c.

Name of the collage	*Number of students*
P	
Q	
R	
S	
T	

d.



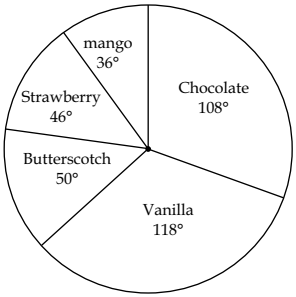
Exercise 17 C

1.

Flavour	*Number of votes*	*Angle covered*
Chocolate	150	$\frac{\cancel{15}^{3}\cancel{0}}{\cancel{50}_{10}\cancel{0}} \times 36\cancel{0} = 108°$
Vanilla	165	$\frac{\cancel{165}^{33}}{\cancel{50}_{10}\cancel{0}} \times 36\cancel{0} = 118.8°$
Butter scotch	70	$\frac{7\cancel{0}}{5\cancel{00}} \times 36\cancel{0} = 50.4°$
Strawberry	65	$\frac{\cancel{65}^{13}}{\cancel{50}_{10}\cancel{0}} \times 360 = 46.8°$
Mango	50	$\frac{\cancel{50}}{\cancel{500}} \times 36\cancel{0} = 36°$

where 500 = total numbers of vote

360° = measure of a circle



2. **a.** Playing each ball.

b. 30%

c. Collecting sea hells and kite skying.

d. Sand castle building

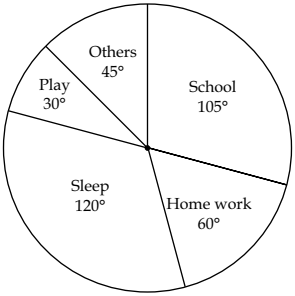
e. 15%.

3.

Name of Activity	*No of hours*	*Angle covered*
School	7	$\frac{7}{\cancel{24}_{1}} \times \overset{15}{\cancel{360}} = 105°$
Homework	4	$\frac{4}{\cancel{24}} \times \overset{15}{\cancel{360}} = 60°$
Play	2	$\frac{2}{\cancel{24}_{1}} \times \overset{15}{\cancel{360}} = 30°$
Sleep	8	$\frac{8}{\cancel{24}_{1}} \times \overset{15}{\cancel{360}} = 120°$
Others	3	$\frac{3}{\cancel{24}_{1}} \times \overset{15}{\cancel{360}} = 45°$

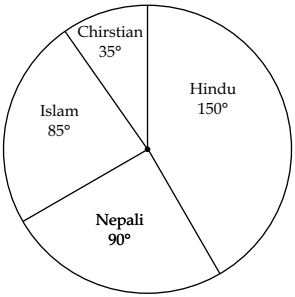
where 24 = total no. of hours.

360° = measure of a circle



4.

Name of Activity	*No of hours*	*Angle covered*
Hindu	450	$\frac{450}{108} \times \frac{360}{1} = 150°$
Nepali	240	$\frac{240}{108} \times \frac{360}{1} = 90°$
Islam	255	$\frac{255}{108} \times \frac{360}{1} = 85°$
Christian	105	$\frac{105}{108} \times \frac{36}{1} = 35°$

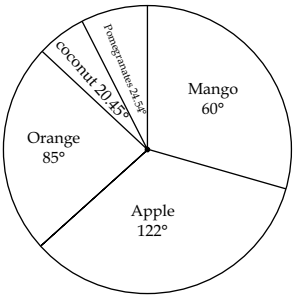


where 360° = measure of circle

108° = total numbers of workers.

5.

Types of fruit	*Number of fruit*	*Angle coveres*
Mango	26	$\frac{\cancel{26}^{13}}{\cancel{88}_{44}_{22}_{11}} \times \cancel{360}^{180}{}^{90} = 106.36°$
Apple	30	$\frac{30}{\cancel{88}_{22}_{11}} \times \cancel{360}^{90}{}^{45} = 122.72°$
Orange	21	$\frac{21}{\cancel{88}_{22}_{11}} \times \cancel{360}^{90}{}^{45} = 85.90°$
Coconut	5	$\frac{5}{\cancel{88}_{22}_{11}} \times \cancel{360}^{90}{}^{45} = 20.45°$
Pomegranates	6	$\frac{6}{\cancel{88}_{22}_{11}} \times \cancel{360}^{90}{}^{45} = 24.54°$



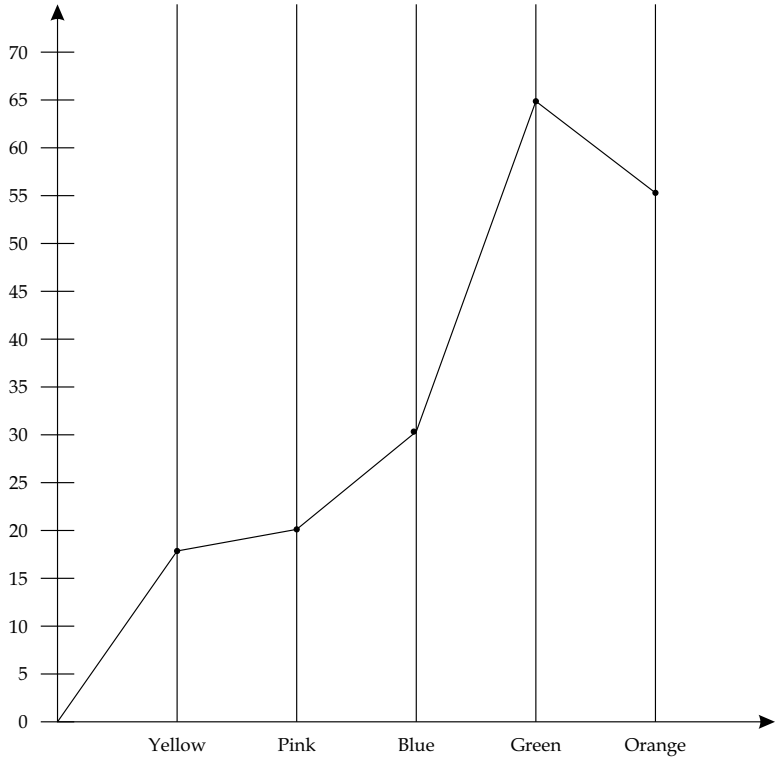
Exercise 17 D

1. **a.** Monday **b.** Wednesday

c. Apple sales on Tuesday = 200 kg

Apple sales on Wednesday = 350 kg

Sales increases = 350 – 200 = 150kg.



a. Green **b.** yellow

c. Most favorite colour = 65

Least favorite colour = 16

Differences = 55 – 16 = 39