

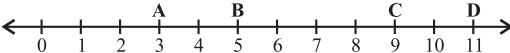
Answer Sheet

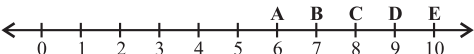
Chapter-1 Knowing our Numbers

Exercise = 1.1

1. (i) 2010002 (ii) 602208 (iii) 6014 (iv) 3,035,025,000 (v) 500,011,073
2. (i) **Indian system :** 12,34,576 = Twelve Lakh thirty-four thousand five hundred seventy-six
International system: 1,234,576 = One million two hundred thirty-four thousand five hundred seventy-six
- (ii) **Indian system:** 11,12,323 = Eleven Lakh twelve thousand three hundred twenty-three
International system: 1,112,323 = One million eleven hundred two thousand three hundred twenty-three
- (iii) **Indian system:** 10,10,560 = Ten lakh ten thousand five hundred sixty.
International system : 1,010,560 = One million ten thousand five hundred sixty
3. (i) Four lakh forty-five thousand eight (ii) Eighteen Lakh thirty thousand two hundred seven
 (iii) Two crore sixty lakh two thousand two
4. (i) Six million three hundred four thousand two hundred sixteen.
 (ii) Two billion four hundred eight million three hundred fifty-two thousand one hundred thirteen
 (iii) Two hundred eighty-six million forty-one thousand seven
5. (i) $2000000 + 1000 + 200 + 30 + 5$ (ii) $80000000 + 8000000 + 100000 + 2000 + 400$
 (iii) $90000000 + 9000000 + 200000 + 3000 + 500$
6. The Place Value of the digit 2 in 3164298 = 200 the face value of the digit 2 in 3164298 = 2 The difference between face value and place value = $200 - 2 = 198$
7. The place value of the digit all 8's in the 380538218
 = 8,8000,80000000
 The sum of all the place value of 8
 = $8 + 8000 + 80000000$
 = 8000 8008
8. Smallest number = 100023, Largest number = 999876
9. 9000
10. (i) 64382 (ii) 82063
11. 045,054,405,504,540,450
12. 1000
13. (i) Smallest digit = 2478 (ii) Smallest digit = 3045
 Largest digit = 8742 Largest digit = 5430
14. (i) 400 (ii) 20 (iii) 3000 (iv) 700000 (v) 5 (vi) 60000

Exercise - 1.2

1. (i) 

 (ii) 
2. (i) < (ii) = (iii) > (iv) <
3. (i) The successor of 83 = $83 + 1 = 84$
 (ii) The successor of 978 = $978 + 1 = 979$

- (iii) The successor of 6113 = $6113 + 1 = 6114$
- (iv) The successor of 101010109 = $101010109 + 1 = 101010110$
- 4. (i) The predecessor of 89 = $89 - 1 = 88$
- (ii) The Predecessor of 50000 = $50000 - 1 = 49999$
- (iii) The Predecessor of 78002 = $78002 - 1 = 78001$
- (iv) The Predecessor of 1010,10109 = $1010,10109 - 1 = 1010,10108$
- 5. (i) 8, 31, 59, 211, 270, 280, 375
- (ii) 7023, 7032, 7302, 7320
- 6. (i) 1100, 925, 886, 786, 325, 270, 141, 0
- (ii) 999, 101, 63, 40, 35, 8, 2
- 7. (i) Two (ii) No whole-number in between (iii) Three
- 8. 100023
- 9. 9999876
- 10. 99999, 1000000, 11nd One is Large be 1.

Exercise - 1.3

1. (i) $67 + 99$
 67 rounded off to nearest ten = 70
 99 rounded off to nearest ten = 100
 So, $70 + 100 = 170$
- (ii) $364 - 273$
 364 rounded off to nearest ten = 360
 273 rounded off to nearest ten = 270
 So, $360 - 270 = 90$
- (iii) $1794 - 1237$
 1794 rounded off to nearest ten = 1790
 1237 rounded off to nearest ten = 1230
 So, $1790 - 1230 = 560$
- (iv) 97×12
 97 rounded off to nearest ten = 100
 12 rounded off to nearest ten = 10
 So, Estimated product = $100 \times 10 = 1000$
- (v) 232×657
 232 rounded off to nearest ten = 230
 657 rounded of to nearest ten = 660
 So, Estimated product = $230 \times 660 = 151800$
- (vi) $993 \div 24$
 993 rounded off to nearest ten = 990
 24 rounded of to nearest ten = 30
 So, Estimated quotient = $990 \div 30 = 33$
2. (i) $124 + 369$
 124 rounded off to nearest hundred = 100
 369 rounded off to nearest hundred = 400
 So, Estimated sum = $100 + 400 = 500$
- (ii) $2132 + 484$
 2132 rounded off to nearest hundred = 2100

- 484 rounded off to nearest hundred = 500
So, Estimated sum = $2100 + 500 = 2600$
- (iii) $5839 + 7456$
5839 rounded off to nearest hundred = 5800
7456 rounded off to nearest hundred = 7500
So, Estimated sum = $5800 + 7500 = 13300$
- (iv) $273 + 999$
273 rounded off to nearest hundred = 300
999 rounded off to nearest hundred = 1000
So, Estimated sum = $300 + 1000 = 1300$
- (v) $867 + 439$
867 rounded off to nearest hundred = 900
439 rounded off to nearest hundred = 400
So, Estimated sum = $900 + 400 = 1300$
- (vi) $8940 + 198$
8940 rounded off to nearest hundred = 9000
198 rounded off to nearest hundred = 200
So, Estimated sum = $9000 + 200 = 9200$
3. (i) $3825 - 312$
3825 rounded off to nearest hundred = 3800
312 rounded off to nearest hundred = 300
So, Estimated subtraction = $3800 - 300 = 3500$
- (ii) $4753 - 531$
4753 rounded off to nearest hundred = 4800
531 rounded off to nearest hundred = 500
So, Estimated subtraction = $4800 - 500 = 4300$
- (iii) $4137 - 435$
4137 rounded off to nearest hundred = 4100
435 rounded off to nearest hundred = 400
So, Estimated subtraction = $4100 - 400 = 3700$
- (iv) $45537 - 6831$
45537 rounded off to nearest hundred = 45500
6831 rounded off to nearest hundred = 680
So, Estimated subtraction = $45500 - 680 = 38700$
- (v) $4789 - 522$
4789 rounded off to nearest hundred = 4800
522 rounded off to nearest hundred = 500
So, Estimated subtraction = $4800 - 500 = 4300$
- (vi) $818234 - 563$
818234 rounded off to nearest hundred = 818200
563 rounded off to nearest hundred = 600
So, Estimated subtraction = $818200 - 600 = 817600$
4. (i) $439 + 334 + 4317$
439 rounded off to its greatest place = 400
334 rounded off to its greatest place = 300
4317 rounded off to its greatest place = 4000

- So, Estimated sum = $400 + 300 + 4000 = 4700$
- (ii) $8325 - 491$
 8325 rounded off to its greatest place = 8000
 491 rounded off to its greatest place = 500
 So, estimated subtraction = $8000 - 500 = 7500$
- (iii) $108734 - 47599$
 108734 rounded off to its greatest place = $1,00,000$
 47599 rounded off to its greatest place = 80000
 So, estimated subtraction = $1,00,000 - 80,000 = 20,000$
- (iv) 898×785
 898 rounded of its greatest place = 900
 785 rounded of its greatest place = 800
 So, estimated subtraction = $900 \times 800 = 720000$
- (v) 9×795
 9 rounded off its greatest place = 10
 795 rounded off its greatest place = 800
 So, estimated multiple = $10 \times 800 = 8000$
- (vi) 87×317
 87 rounded off its greatest place = 90
 317 rounded off its greatest place = 300
 So, estimated multiple = $90 \times 300 = 27000$

Exercise - 1.4

1. (i) XXXVIII (ii) XLIV (iii) LVI (iv) LXI (v) LXX
 (vi) LXXVI (vii) LXXXIII (viii) D (ix) DCCLXII (x) DCLV
 (xi) DXLI (xii) CMLXXXI
2. (i) 90 (ii) 820 (iii) 479 (iv) 309 (v) 416
 (vi) 414 (vii) 98 (viii) 464 (ix) 63 (x) 365
 (xi) 85 (xii) 365
3. (i) $32 + 67 = XXXII + LXVII$
 $= XCIX$
 (ii) $216 - 174 = CCXVI - CLXXIV$
 $= CCCXC$
 (iii) $12 \times 7 = XII \times VII$
 $= LXXXIV$
 (iv) $3645 \div 45 = MMMDCXLV \div XLV$
 $= LXXXV$
4. (i) I could appear only before v or x
 \therefore IC is meaning less.
 (ii) L is never repeated
 \therefore LL is meaningless
 (iii) D is never repeated
 \therefore DDII is meaningless
 (iv) I an appear only betare V and X only. IM is meaningless

Objective type questions :

1. iv 2. (ii) 3. iv 4. iii 5. iii 6. i 7. i 8. iii 9. i 10. ii

4. (i) $18 + 39$

$$\begin{array}{r} 18 \\ + 39 \\ \hline 57 \end{array} \quad \begin{array}{r} 57 \\ - 39 \\ \hline 18 \end{array}$$

(ii) $135 + 978$

$$\begin{array}{r} 135 \\ + 978 \\ \hline 1113 \end{array} \quad \begin{array}{r} 1113 \\ - 978 \\ \hline 135 \end{array}$$

(iii) $602 + 398$

$$\begin{array}{r} 602 \\ + 398 \\ \hline 1000 \end{array} \quad \begin{array}{r} 1000 \\ - 398 \\ \hline 602 \end{array}$$

(iv) $19783 + 3082$

$$\begin{array}{r} 19783 \\ + 3082 \\ \hline 22865 \end{array} \quad \begin{array}{r} 22865 \\ - 3082 \\ \hline 19783 \end{array}$$

5. (i) $3725 + 4328$

$$\begin{array}{r} 3725 \\ + 4328 \\ \hline 8053 \end{array}$$

(ii) $1797 + 2432$

$$\begin{array}{r} 1797 \\ + 2432 \\ \hline 4229 \end{array}$$

(iii) $6257 + 4723$

$$\begin{array}{r} 6257 \\ + 4723 \\ \hline 10980 \end{array}$$

(iv) $32494 + 87382$

$$\begin{array}{r} 32494 \\ + 87382 \\ \hline 119876 \end{array}$$

(v) $853698 + 432875$

$$\begin{array}{r} 853698 \\ + 432875 \\ \hline 1286573 \end{array}$$

(vi) $594038 + 352865$

$$\begin{array}{r} 594038 \\ + 352865 \\ \hline 946883 \end{array}$$

6. (i) 2.1

(ii) .6

(iii) 23

(iv) 73

Exercise - 2.2

1. (i) $196725 - (72916 - 53472)$

$$196725 - 19444 = 177281$$

(ii) $[1967 + 25 - 72916] - 53472$

$$= 123809 - 53472 = 70337$$

2. (i) $7839 - 983$

$$\begin{array}{r} 7839 \\ - 983 \\ \hline 6856 \end{array}$$

(ii) $100000 - 98765$

$$\begin{array}{r} 100000 \\ - 98765 \\ \hline 1235 \end{array}$$

(iii) $63514 - 39837$

$$\begin{array}{r} 63514 \\ - 39837 \\ \hline 23677 \end{array}$$

(iv) $798372 - 95198$

$$\begin{array}{r} 798372 \\ - 95198 \\ \hline 703174 \end{array}$$

3. (i) $535 - 289$

$$\begin{array}{r} 535 \\ - 289 \\ \hline 246 \end{array}$$

(ii) $6780 - 2092$

$$\begin{array}{r} 6780 \\ - 2092 \\ \hline 4688 \end{array}$$

(iii) $20105 - 9823$

$$\begin{array}{r} 20105 \\ - 9823 \\ \hline 10282 \end{array}$$

(iv) $20000 - 19786$

$$\begin{array}{r} 20000 \\ - 19786 \\ \hline 214 \end{array}$$

4. (i) $55 + a = 80$

$$a = 80 - 55 = 25$$

(iii) $a + 0 = 5$

$$a = 5 - 0 = 0$$

(ii) $11 + a = 33$

$$a = 33 - 11 = 22$$

(iv) $a + 25 = 40$

$$a = 40 - 25 = 15$$

5. Smallest seven digit number = 1000000

Largest six digit number = 999999

Subtract 999999 from 1000000 = $1000000 - 999999 = 1$

7. In a school there are students = 1000

The numbers of girls = 437

The number of boys = $1000 - 437 = 563$

8. There are total students in the class = 70

The students play cricket = 37

The students play hockey = 12

$$\begin{aligned}\text{The students play neither hockey nor cricket} &= 70 - (37 + 12) \\ &= 70 - 49 \\ &= 21\end{aligned}$$

Exercise = 2.3

$$\begin{aligned}1. \text{ (i) } 13 \times 4 &= 4 \times 13 \\ 52 &= 52 \\ &= \frac{52}{52} = 1\end{aligned}$$

commutative property

(ii) closure property multiplication over property of multiplication

(iii) Distribution property of addition.

(iv) Association

$$\begin{array}{lllll}2. \text{ (i) } 0 & \text{(ii) } 0 & \text{(iii) } 761 & \text{(iv) } 125 & \text{(v) } 68 \\ \text{(vi) } 7835000 & & \text{(vii) } 77,76 & \text{(viii) } 2 & \end{array}$$

$$\begin{aligned}3. \text{ (i) } 15 \times 4 \times 10 &= (4 \times 10) \times 15 \\ &= 40 \times 15 \\ &= 600\end{aligned}$$

$$\begin{aligned}\text{(ii) } 4 \times 25 \times 30 \times 125 \\ &= (4 \times 25) \times (30 \times 125) \\ &= 100 \times 3750 \\ &= 375000\end{aligned}$$

$$\begin{aligned}\text{(iii) } 40 \times 9 \times 25 \times 2453 &= (9 \times 25) \times (40 \times 2453) \\ &= 225 \times 98120 \\ &= 22077000\end{aligned}$$

$$\begin{aligned}\text{(iv) } 25 \times 987 \times 80 \times 4 &= (25 \times 4) \times (987 \times 80) \\ &= 100 \times 78960 \\ &= 7896000\end{aligned}$$

$$\begin{aligned}4. \text{ (i) } 792 \times 7 + 79 \times 3 &= 792(7 + 3) \\ &= 5544 + 2376 \\ &= 7,920\end{aligned}$$

$$\begin{aligned}\text{(ii) } 97245 \times 82 + 97245 \times 18 \\ &= 97245(82 + 18) \\ &= 7974090 + 1750410 \\ &= 97245000\end{aligned}$$

(iii) and (iv) similar as (i) and (ii) So, students do your self

$$\begin{array}{ll}5. \text{ (i) } 569 \times 107 = 60883 & \text{(ii) } 896 \times 1009 = 904064 \\ \text{(iii) } 7538 \times 106 = 799028 & \text{(iv) } 9423 \times 112 = 1055376\end{array}$$

7. 1

8. The number of total chairs = 50

The cost of one chair = ₹ 125

So, The cost of 50 chairs = $50 \times ₹ 125 = ₹ 6250$

and

The number of total tables = 50

The cost of one table = ₹ 225

So, the cost of 50 tables = $50 \times ₹ 225 = ₹ 11250$

The total cost of total chairs and total tables = ₹ 6250 + ₹ 11250
 = ₹ 17500

9. A dealer purchased T.V. s = 139
 The cost of each T.V is = ₹ 14350
 The cost of 139 T.V = ₹ 14350 × 139 = ₹ 1994650

Exercise - 2.4

1. (i) $45678 \div 231$

$$\begin{array}{r} 197 \\ 231 \overline{) 45678} \\ \underline{231} \\ 2257 \\ \underline{2079} \\ 1788 \\ \underline{1617} \\ 171 \end{array}$$

Q = 197

R = 171

(iii), (iv), (v) and

(ii) $27581 \div 81$

$$\begin{array}{r} 34 \\ 81 \overline{) 27581} \\ \underline{243} \\ 328 \\ \underline{327} \\ 11 \end{array}$$

Q = 34

R = 11

(vi) similar as (i) and (ii).

So these questions students do your self.

2. (i) $48 \div 6 = x$

$x = 48 \div 6$

$x = 8$

(ii) $x = 81 \div 9$

$x = 9$

(iii) $10 \div 1 = x$

$x = 10 \div 1$

$= 10$

3. least 5-digit number = 10000

divide 10000 by 6

$$\begin{array}{r} 1666 \\ 6 \overline{) 10000} \\ \underline{6} \\ 40 \\ \underline{36} \\ 40 \\ \underline{36} \\ 40 \\ \underline{36} \\ 4 \end{array}$$

Hence, the remainder = 4

and quotient = 1666

To make the least 5 digit number exactly divisible, we will have to add (6-4) to the dividend make it divisible exactly by 6. So the least 5 - digit number would be $10000 + 2 = 10002$

5. greatest 5 - digit number = 99999

Divide 99999 by 40

$$\begin{array}{r}
 40 \overline{)99999} \overline{)2499} \\
 \underline{80} \\
 199 \\
 \underline{160} \\
 399 \\
 \underline{360} \\
 399 \\
 \underline{360} \\
 39 \\
 \underline{39} \\
 0
 \end{array}$$

Hence, the required number = $99999 - 39$
 $= 99960$

6. divided by 89
 quotient = 35
 remainder = 19
 So, Dividend = (Divisor \times Quotient) + Remainder
 $= (89 \times 35) + 35$
 $= 3134$
7. The product of two numbers = 14716
 if one number = 52
 Then, other number = $14716 \div 52 = 283$
8. The cost of one dozen eggs = ₹ 22
 The eggs can be purchased by ₹ 1276
 $= ₹ 1276 \div ₹ 22$
 $= 58$
 58 dozen eggs can be purchased by ₹ 1276.
10. A garden plants trees = 357
 The number of rows = 17
 The number of trees in each row
 $= 357 \div 17$
 $= 21$
 21 trees in each row. If each row contains equal number of trees.

Exercise = 2.5

1. (i) $0 + 5 = 5$ (ii) $0 \times 5 = 0$ (iii) $\frac{0}{5} = 0$
 (iv) $5 - 0 = 5$
2. $123456 \times 8 + 6 = 987654$
 $1234567 \times 8 + 7 = 9876543$
3. $12345 \times 9 + 6 = 111111$
 $123456 \times 9 + 7 = 1111111$
 $1234567 \times 9 + 8 = 11111111$
 $12345678 \times 9 + 9 = 111111111$
4. $9876 \times 9 + 4 = 88888$
 $98765 \times 9 + 3 = 888888$
 $987654 \times 9 + 2 = 8888888$
 $9876543 \times 9 + 1 = 88888888$

5. 9×5
 10×6
 11×7

Objective type questions :

1. (i) 2. (ii) 3. ii 4. i 5. (iii) 6. ii 7. i 8. iii 9. iii 10. iii

Fill in the blanks :

1. $a > b$ 2. Associative 3. 0 4. necessarily 5. Quotient

Chapter Assessment :

1. (i) 29 (ii) 144 (iii) 158 (iv) 60
 2. (i) 191737 (ii) 509749 (iii) 44856 (iv) 5530
 3. (i) $Q=963, R=0$
 (ii) $Q=96, R=446$
 4. 18750 5. 504, 498, Monday 6. 22 7. ₹ 70 8. 990
 9. when the two number are equal i.e, $a=b$ 10. 42
 11. (i) 1, 3, 6, 10, 15, 21, 28, 36, 45, 55 (ii) 1, 4, 9, 16, 25, 36, 49, 69, 81, 100
 (iii) 2, 6, 12, 20, 30, 42, 56, 72, 90, 10
 2. (i) 22, 29, 37, 46 (ii) $11111 \times 11 = 122221, 111111 \times 11 = 1222221$

Chapter = 3 Playing with Numbers

Exercise 3.1

1. $20 - (10 - 3 + 2)$
 $= 20 - (7 + 2)$
 $= 20 - 9$
 $= 11$
 2. $100 - [20 + \{50 - (40 - 10)\}]$
 $= 100 - [20 + \{50 - 30\}]$
 $= 100 - [20 + 20]$
 $= 100 - 40 = 60$
 3. $24 + 33 \div (34 - 23)$
 $= 24 + 33 \div 11$
 $= 24 + 3$
 $= 27$
 4. $8 \div (15 - 11) + 4$
 $= 8 \div 4 + 4$
 $= 2 + 4$
 $= 6$
 5. $-36 + 96 \div (7 + 9)$
 $= -36 + 96 \div 16$
 $= -36 + 6$
 $= -30$
 7. $(-3) \{(-6) + (20)\} \times (-3) - (7 - 9) (-2)$
 $= -3 \times (14) \times (-3) - (-2) (-2)$
 $= -42 \times (-3) - 4$
 $= 126 - 4$
 $= 122$
 8. $5 + [4 - 5 - \{6(5 - 4 + 1)\}]$
 $5 + [4 - 5 - \{6(2)\}]$

$$\begin{aligned}
&= 5 + [4 - 5 \{6 \times 2\}] \\
&= 5 + [4 - 5 \times 12] \\
&= 5 + [4 - 40] \\
&= 5 - 36 \\
&= -31
\end{aligned}$$

$$\begin{aligned}
9. & [6 \times \{8 + (7 - 2 + 4)\} + 3] \\
&= [6 \times \{8 + (5 + 4)\} + 3] \\
&= [6 \times \{8 + 9\} + 3] \\
&= [6 \times 17 + 3] = 109
\end{aligned}$$

$$\begin{aligned}
10. & \frac{1}{2} \text{ of } [24 + \{15 - (17 - 38 \div 19)\}] \\
&= \frac{1}{2} \text{ of } [24 + \{15 - (17 - 2)\}] \\
&= \frac{1}{2} \text{ of } [24 + \{15 - 5\}] \\
&= \frac{1}{2} \text{ of } [24 + 0] \\
&= \frac{1}{2} \text{ of } 24 \\
&= \frac{1}{2} \times 24 \\
&= \frac{24}{2} = 12
\end{aligned}$$

Exercise 3.2

- 1, 2, 4, 5, 8, 10, 20, 40
 - 1, 3, 5, 15, 25, 75
 - 1, 2, 5, 10, 11, 22, 55, 110
- 11, 22, 33, 44, 55
 - 15, 30, 45, 60, 75
 - 19, 38, 57, 76, 95
 - 25, 50, 75, 100, 125
- only 19 and 23 are factors of 2185
- Even numbers = 48, 80, 332, 264, odd numbers = 43, 61, 69, 155
- 7, 11, 13, 17, 19, 23, 29, 31
 - 71, 73, 79, 83, 89
 - 41, 43, 47, 53, 59, 61, 67, 71, 73, 79,
 - 79, 83, 89, 97, 101, 103, 109, 113, 127, 131, 139, 149, 151, 157
- 6, 12, 18, 24, 30, 36, 42, 48, 54, 60, 66, 72, 78, 84, 90, 96
 - 15, 30, 45, 60, 75, 90
- $31 = 5 + 7 + 19$
 - $35 = 5 + 7 + 23$
 - $49 = 3 + 5 + 41$
 - $63 = 7 + 13 + 43$
- (14, 17) and (54, 61) are pairs of 60 prime
- 9, 15, 21, 25, 27
- (41, 43), (59, 61), (71, 73)
- 3, 5
 - 11, 13
 - 17, 19
 - 41, 43
- (3, 5), (5, 7), (11, 13), (17, 19), (41, 43), (71, 73), (101, 103)
- 90, 91, 92, 93, 94, 95, 96

Exercise 3.3

- Since the unit place digit of 389510 is 0. Therefore it is perfectly divisible by 3 and 4203324 and 12342 is divisible by 3.
 - 3437712 and 9811602
 - 8502153 and 4662707

2. (i) 672

$$\begin{array}{r} 231 \overline{)672} \text{ (112)} \\ \underline{6} \\ 7 \\ \underline{6} \\ 12 \\ \underline{12} \\ \underline{x} \end{array}$$

(ii) 689

$$\begin{array}{r} 6 \overline{)689} \text{ (114)} \\ \underline{6} \\ 8 \\ \underline{6} \\ 29 \\ \underline{-24} \\ \underline{3} \end{array}$$

(iii) $6 \overline{)7236} \text{ (1206)}$

$$\begin{array}{r} 6 \\ \underline{12} \\ 12 \\ \underline{36} \\ 36 \\ \underline{x} \end{array}$$

(iv) $6 \overline{)8135} \text{ (1355)}$

$$\begin{array}{r} 6 \\ \underline{21} \\ 18 \\ \underline{33} \\ 30 \\ \underline{35} \\ 30 \\ \underline{5} \end{array}$$

(v) $6 \overline{)1236} \text{ (206)}$

$$\begin{array}{r} 12 \\ \underline{36} \\ 36 \\ \underline{0} \end{array}$$

3. (i) $8 \overline{)328} \text{ (41)}$

$$\begin{array}{r} 32 \\ \underline{08} \\ 8 \\ \underline{0} \end{array}$$

(ii) $8 \overline{)8004} \text{ (100)}$

$$\begin{array}{r} 8 \\ \underline{04} \end{array}$$

(iii) $8 \overline{)4821} \text{ (602)}$

$$\begin{array}{r} 48 \\ \underline{021} \\ 16 \\ \underline{5} \end{array}$$

(iv) $8 \overline{)4728} \text{ (591)}$

$$\begin{array}{r} 40 \\ \underline{72} \\ 72 \\ \underline{08} \\ 8 \\ \underline{0} \end{array}$$

(v) $8 \overline{)8256} \text{ (1032)}$

$$\begin{array}{r} 8 \\ \underline{25} \\ 24 \\ \underline{16} \\ 16 \\ \underline{0} \end{array}$$

(vi) $8 \overline{)9096} \text{ (1032)}$

$$\begin{array}{r} 8 \\ \underline{10} \\ 8 \\ \underline{29} \\ 24 \\ \underline{36} \\ 32 \\ \underline{4} \end{array}$$

4. (i) $9 \overline{)31311} \text{ (3479)}$

$$\begin{array}{r} 27 \\ \underline{43} \\ 36 \\ \underline{71} \\ 63 \\ \underline{81} \\ 81 \\ \underline{0} \end{array}$$

(ii) $9 \overline{)81} \text{ (9)}$

$$\begin{array}{r} 81 \\ \underline{0} \end{array}$$

(iii) $9 \overline{)453} \text{ (5)}$

$$\begin{array}{r} 45 \\ \underline{0} \end{array}$$

(iv) $9 \overline{)6517} \text{ (724)}$

$$\begin{array}{r} 63 \\ \underline{21} \\ 18 \\ \underline{37} \\ 36 \\ \underline{1} \end{array}$$

$$\begin{array}{r}
 5. \text{ (i) } 11 \overline{)792538} \text{ (72047)} \\
 \underline{77} \\
 22 \\
 \underline{22} \\
 53 \\
 \underline{44} \\
 78 \\
 \underline{77} \\
 1
 \end{array}$$

$$\begin{array}{r}
 \text{(ii) } 11 \overline{)2835987} \text{ (257817)} \\
 \underline{22} \\
 63 \\
 \underline{55} \\
 85 \\
 \underline{77} \\
 89 \\
 \underline{88} \\
 18 \\
 \underline{11} \\
 77 \\
 \underline{77} \\
 0
 \end{array}$$

(iii), (iv) and (v) as similar as (i) and (ii) so, these questions students do your self.

6. (i) 0 (ii) 1 (iii) 0 (iv) 2 (v) 1 (vi) 9
 7. (i) 6 (ii) all (iii) all (iv) 2

Exercise 3.4

$$\begin{array}{r}
 1. \text{ (i) } \begin{array}{r|l} 2 & 38 \\ \hline 19 & 19 \\ \hline & 1 \end{array}
 \end{array}$$

$$38 = 2 \times 19$$

$$\begin{array}{r}
 \text{(iv) } \begin{array}{r|l} 2 & 66 \\ \hline 11 & 33 \\ \hline 11 & 11 \\ \hline & 1 \end{array}
 \end{array}$$

$$66 = 2 \times 11 \times 11$$

$$\begin{array}{r}
 \text{(ii) } \begin{array}{r|l} 2 & 54 \\ \hline 3 & 27 \\ \hline 3 & 9 \\ \hline 3 & 3 \\ \hline & 1 \end{array}
 \end{array}$$

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

$$\begin{array}{r}
 \text{(v) } \begin{array}{r|l} 2 & 168 \\ \hline 2 & 84 \\ \hline 2 & 42 \\ \hline 3 & 21 \\ \hline 7 & 7 \\ \hline & 1 \end{array}
 \end{array}$$

$$168 = 2 \times 2 \times 2 \times 3 \times 7$$

$$\begin{array}{r}
 \text{(iii) } \begin{array}{r|l} 2 & 116 \\ \hline 2 & 58 \\ \hline 29 & 29 \\ \hline & 1 \end{array}
 \end{array}$$

$$116 = 2 \times 2 \times 29$$

$$\begin{array}{r}
 \text{(vi) } \begin{array}{r|l} 2 & 858 \\ \hline 3 & 429 \\ \hline 11 & 143 \\ \hline 13 & 13 \\ \hline & 1 \end{array}
 \end{array}$$

$$858 = 2 \times 3 \times 11 \times 13$$

$$\begin{array}{r}
 \text{(vii) } \begin{array}{r|l} 2 & 1122 \\ \hline 3 & 561 \\ \hline 11 & 187 \\ \hline 17 & 17 \\ \hline & 1 \end{array}
 \end{array}$$

$$1122 = 2 \times 3 \times 11 \times 17$$

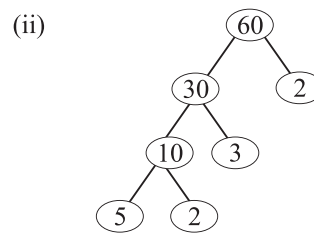
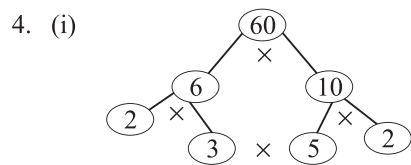
(vii), (ix), (x), (xi), (xii), (xiii), (xiv), and (xv) as similar as (i) to (vii) so these questions do your self.

$$\begin{array}{r}
 2. \begin{array}{r|l} 3 & 999999 \\ \hline 3 & 333333 \\ \hline 3 & 111111 \\ \hline 7 & 37037 \\ \hline 11 & 5291 \\ \hline 13 & 4881 \\ \hline 37 & 37 \\ \hline & 1 \end{array}
 \end{array}$$

$$\text{so, } 999999 = 3 \times 3 \times 3 \times 7 \times 11 \times 13 \times 37$$

$$\begin{array}{r|l}
 2 & 100000 \\
 \hline
 2 & 50000 \\
 \hline
 2 & 25000 \\
 \hline
 2 & 12500 \\
 \hline
 2 & 6250 \\
 \hline
 5 & 3125 \\
 \hline
 5 & 625 \\
 \hline
 5 & 125 \\
 \hline
 5 & 25 \\
 \hline
 5 & 5 \\
 \hline
 & 1
 \end{array}$$

$$100000 = 2 \times 2 \times 2 \times 2 \times 2 \times 5 \times 5 \times 5 \times 5 \times 5$$



Exercise 3.5

1. (i)

$$\begin{array}{r|l}
 2 & 42 \\
 \hline
 3 & 21 \\
 \hline
 7 & 7 \\
 \hline
 & 1
 \end{array}$$

$$\begin{array}{r|l}
 2 & 56 \\
 \hline
 2 & 28 \\
 \hline
 2 & 14 \\
 \hline
 7 & 7 \\
 \hline
 & 1
 \end{array}$$

$$\begin{aligned}
 42 &= 2 \times 3 \times 7 \\
 56 &= 2 \times 2 \times 2 \times 7 \\
 &= 2 \times 7 = 14
 \end{aligned}$$

(ii)

$$\begin{array}{r|l}
 3 & 69 \\
 \hline
 23 & 23 \\
 \hline
 & 1
 \end{array}$$

$$\begin{array}{r|l}
 11 & 253 \\
 \hline
 23 & 23 \\
 \hline
 & 1
 \end{array}$$

$$\begin{aligned}
 69 &= 3 \times 23 \\
 253 &= 11 \times 23 \\
 \text{So} &= 23
 \end{aligned}$$

(iii) and (iv) similar as (i) and (ii)

(v) 54, 108, 144

$$\begin{array}{r|l}
 2 & 54 \\
 \hline
 3 & 27 \\
 \hline
 3 & 9 \\
 \hline
 3 & 3 \\
 \hline
 & 1
 \end{array}$$

$$\begin{array}{r|l}
 2 & 108 \\
 \hline
 2 & 54 \\
 \hline
 3 & 27 \\
 \hline
 3 & 9 \\
 \hline
 3 & 3 \\
 \hline
 & 1
 \end{array}$$

$$\begin{array}{r|l}
 2 & 144 \\
 \hline
 2 & 72 \\
 \hline
 2 & 36 \\
 \hline
 2 & 18 \\
 \hline
 3 & 9 \\
 \hline
 3 & 3 \\
 \hline
 & 1
 \end{array}$$

$$\begin{aligned}
 54 &= 2 \times 3 \times 3 \times 3 \\
 108 &= 2 \times 2 \times 3 \times 3 \times 3 \\
 144 &= 2 \times 2 \times 2 \times 2 \times 3 \times 3
 \end{aligned}$$

$$\text{So, } 2 \times 3 \times 3 = 18$$

(vi) and (vii) as similar as (v) so these question do your self.

$$2. \text{ (i) } \begin{array}{r} 390 \overline{)520} \text{ (1} \\ \underline{390} \\ 130 \overline{)390} \text{ (3} \\ \underline{390} \\ \underline{0} \end{array}$$

$$\text{(ii) } \begin{array}{r} 10549 \overline{)13563} \text{ (1} \\ \underline{10549} \\ 3014 \overline{)10549} \text{ (3} \\ \underline{9042} \\ 1507 \overline{)3014} \text{ (2} \\ \underline{3014} \\ \underline{0} \end{array}$$

$$\text{(iii) } \begin{array}{r} 2628 \overline{)8541} \text{ (1} \\ \underline{7884} \\ 657 \overline{)2628} \text{ (4} \\ \underline{2628} \\ \underline{0} \end{array}$$

$$\text{(iv) } \begin{array}{r} 1197 \overline{)1311} \text{ (1} \\ \underline{1197} \\ 144 \overline{)1197} \text{ (8} \\ \underline{1152} \\ 45 \overline{)144} \text{ (3} \\ \underline{135} \\ 9 \overline{)45} \text{ (5} \\ \underline{45} \\ \underline{0} \end{array}$$

$$\begin{array}{r} 9 \overline{)627} \text{ (6} \\ \underline{54} \\ 87 \overline{)627} \text{ (7} \\ \underline{609} \\ 18 \overline{)87} \text{ (4} \\ \underline{72} \\ 15 \overline{)18} \text{ (1} \\ \underline{15} \\ 3 \overline{)15} \text{ (5} \\ \underline{15} \\ \underline{0} \end{array}$$

$$\text{(v) } \begin{array}{r} 804 \overline{)2077} \text{ (2} \\ \underline{1608} \\ 469 \overline{)804} \text{ (1} \\ \underline{469} \\ 335 \overline{)469} \text{ (1} \\ \underline{335} \\ 134 \overline{)335} \text{ (2} \\ \underline{268} \\ 67 \overline{)134} \text{ (2} \\ \underline{134} \\ \underline{0} \end{array}$$

$$\begin{array}{r} 67 \overline{)2881} \text{ (43} \\ \underline{2881} \\ \underline{0} \end{array}$$

$$\begin{array}{r} 268 \overline{)134} \text{ (2} \\ \underline{134} \\ \underline{0} \end{array}$$

3. (i) 1 (ii) 2 (iii) 1

$$4. \begin{array}{r} 140 \overline{)170} \text{ (1} \\ \underline{140} \\ 30 \overline{)140} \text{ (4} \\ \underline{120} \\ 20 \overline{)30} \text{ (1} \\ \underline{20} \\ 10 \overline{)20} \text{ (2} \\ \underline{20} \\ \underline{0} \end{array}$$

$$\begin{array}{r} 10 \overline{)155} \text{ (15} \\ \underline{150} \\ 5 \overline{)10} \text{ (2} \\ \underline{10} \\ \underline{x} \end{array}$$

$$\begin{array}{r}
 5. \quad 625 \overline{)1433} (2 \\
 \underline{1250} \\
 183 \overline{)625} (3 \\
 \underline{549} \\
 76 \overline{)183} (2 \\
 \underline{152} \\
 31 \overline{)76} (2 \\
 \underline{62} \\
 14 \overline{)31} (2 \\
 \underline{28} \\
 3 \overline{)14} (4 \\
 \underline{12} \\
 2 \overline{)3} (1 \\
 \underline{2} \\
 1 \overline{)2} (2 \\
 \underline{2} \\
 0
 \end{array}$$

6. We have, $8.25 \text{ m} = 825 \text{ cm}$
 $6.75 \text{ m} = 675 \text{ cm}$
 $4.50 \text{ m} = 450 \text{ cm}$

$$\begin{array}{r}
 3 \overline{)825} \\
 \underline{5} \quad 275 \\
 \underline{5} \quad 55 \\
 11 \overline{)11} \\
 \underline{11} \\
 1
 \end{array}$$

$$\begin{array}{r}
 3 \overline{)675} \\
 \underline{3} \quad 225 \\
 \underline{3} \quad 75 \\
 \underline{5} \quad 25 \\
 \underline{5} \quad 5 \\
 1
 \end{array}$$

$$\begin{array}{r}
 2 \overline{)450} \\
 \underline{3} \quad 225 \\
 \underline{3} \quad 75 \\
 \underline{5} \quad 25 \\
 \underline{5} \quad 5 \\
 1
 \end{array}$$

$$\begin{array}{l}
 825 = 3 \times 5 \times 5 \times 11 \\
 675 = 3 \times 3 \times 3 \times 5 \times 5 \\
 450 = 2 \times 3 \times 3 \times 5 \times 5
 \end{array}$$

So, $3 \times 5 \times 5 = 75 \text{ cm}$

$$\begin{array}{r}
 7. \quad 680 \overline{)850} (1 \\
 \underline{680} \\
 170 \overline{)680} (4 \\
 \underline{680} \\
 0
 \end{array}$$

So, 170 litre

$$\begin{array}{r}
 8. \quad 84 \overline{)162} (1 \\
 \underline{84} \\
 78 \overline{)84} (1 \\
 \underline{78} \\
 6 \overline{)78} (13 \\
 \underline{78} \\
 0
 \end{array}$$

So, 6 m

$$\begin{array}{r}
 9. \quad 180 \overline{)192} (1 \\
 \underline{180} \\
 12 \overline{)180} (15 \\
 \underline{180} \\
 0
 \end{array}$$

So, 12 meters

10. (i) $\frac{5}{7}$

(ii) $\frac{17}{24}$

(iii) $\frac{21}{23}$

(iv) $\frac{89}{119}$

Exercise 3.6

1. (i) 105, 175, 140

2	105, 175, 140
2	105, 175, 70
5	105, 175, 35
7	21, 35, 7
3	3, 5, 1
5	1, 5, 1
	1, 1, 1

$$2 \times 2 \times 5 \times 7 \times 3 \times 5 = 2100$$

(ii)

2	40, 80, 120, 160,
2	20, 40, 60, 80,
2	10, 20, 30, 40,
2	5, 10, 15, 20
2	5, 5, 15, 10
3	5, 5, 15, 5
5	5, 5, 5, 5
	1, 1, 1, 1

$$2 \times 2 \times 2 \times 2 \times 2 \times 3 \times 5 = 480$$

(iii) and (iv) as similar as (i) and (ii) so these questions students do your self.

2.

2	25, 40, 60
2	25, 20, 30
2	25, 10, 15
3	25, 5, 15
5	25, 5, 5
5	5, 1, 1
	1, 1, 1

$$\text{LCM} = 2 \times 2 \times 2 \times 3 \times 5 \times 5 = 600$$

$$\begin{aligned} \text{Hence, the required number} &= (600 + 7) \\ &= 607 \end{aligned}$$

3.

2	3, 4, 5, 6, 10, 15,
2	3, 2, 5, 3, 5, 15,
3	3, 1, 5, 3, 5, 15,
5	1, 1, 5, 1, 5, 5,
	1, 1, 1, 1, 1, 1,

$$\text{LCM} = 2 \times 2 \times 3 \times 5 = 60$$

4.

2	32, 36, 40, 45, 48
2	16, 18, 20, 45, 24
2	8, 9, 10, 45, 12
2	4, 9, 5, 45, 6
2	2, 9, 5, 45, 3
3	1, 9, 5, 45, 3
3	1, 3, 5, 15, 1
5	1, 1, 5, 5, 1
	1, 1, 1, 1, 1

$$\text{LCM} = 2 \times 2 \times 2 \times 2 \times 2 \times 3 \times 3 \times 5 = 1440$$

5.

2	8, 16, 24, 36, 48
2	4, 8, 12, 18, 24
2	2, 4, 6, 9, 12
2	1, 2, 3, 9, 6
3	1, 1, 3, 9, 3
3	1, 1, 1, 3, 1
	1, 1, 1, 1, 1

$$\text{LCM} = 2 \times 2 \times 2 \times 2 \times 3 \times 3 = 144$$

Now greatest number of five digits = 99999

On, dividing 99999 by 144, we find that remainder is 63.

So, greatest five digit number exactly divisible by 144 = $99999 - 63 = 99,936$ and if remainder 3 in each case = $99936 + 3 = 99939$

2	16, 28, 40, 56
2	8, 14, 20, 28
2	4, 7, 10, 14
2	2, 7, 5, 7
5	1, 7, 5, 7
7	1, 7, 1, 7
	1, 1, 1, 1

$$\text{LCM} = 2 \times 2 \times 2 \times 2 \times 5 \times 7 = 560$$

No, nearest number = 10000

(i) On, divisible 10000 by 560, we find that remainder 480.

So, nearest 10000 number exactly divisible by 560 = $10000 - 480 = 9520$

(ii) The other number is divisible by 560 to nearest 10000 = $9520 + 560 = 10080$.

7, 8, 9, 10, and 11 as similar as 1, to 6 questions. So these questions students do your self.

Objective type questions.

1. (ii) (2) iii (3) i (4) iii (5) ii
 6. ii (7) i (8) i (9) iv (10) iv

True/False

1. False (2) True (3) False (4) True (5) True

Fill in the blanks :

1. 2 (2) 1 (3) odd (4) 4 (5) even
 6. L.C.M (7) H.C.F

Chapter Assessment

1. No, because their H.C.F. is not 1
 2. (51, 53), (61, 63), (71, 73) $3 \cdot 3 \times 3 \times 3 \times 37$
 4. $2 \times 2 \times 2 \times 2 \times 5 \times 5 \times 5 \times 5$
 5. (i) 1080 (ii) 756 (iii) 1764 (iv) 11340
 6. (i) 12 (ii) 15 (iii) 20
 7. 9 8. 12
 9. (i) 3 (ii) 8 (iii) 1
 10. (i) 6, 12 (ii) 15, 25 (iii) 16, 32 (iv) 16, 24
 11. No, because 15 is not a factor of 350
 12. 60 litres (13) 5460 (14) 122m 40cm

Chapter - 4 Integers

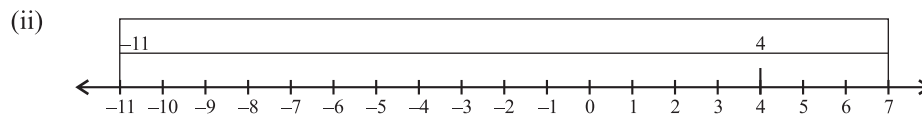
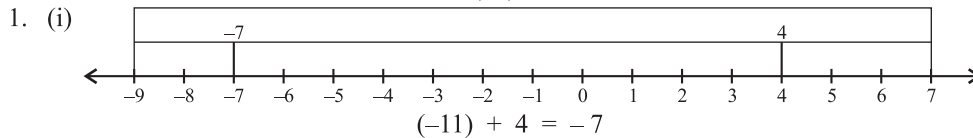
Exercise - 4.1

1. (i) Birth of 7 babies (ii) A debit of ₹ 500
 (iii) Rise in temperature (iv) At a depth of 7m
 (v) Increase in population (vi) Rotating a toy in the clockwise direction
 (vii) spending ₹ 500 per day (viii) Depositing ₹ 2000 in a bank
 2. (i) -3 (ii) -120 (iii) -7 (iv) +900 (v) +17
 (vi) -7 (vii) +100 (viii) +7
 3. (i) -5 (ii) -5 (iii) 2 (iv) 7

4. (i) $<$ (ii) $<$ (iii) $<$ (iv) $>$ (v) $>$ (vi) $>$
 5. (i) -1 (ii) -2, -1, 0, 1, 2 (iii) 1, 2, 3, 4 (iv) -5, -4, -3, -2 (v) -3, -2, -1, 0, 1, 2
 (vi) -4, -3, -2, -1, 0
 6. (i) -6 (ii) -5 (iii) -240 (iv) -18 (v) -45 (vi) -19
 7. (i) -39 (ii) 5 (iii) 210 (iv) -150 (v) 0 (vi) 140
 8. (i) $-5 < -2 < 0 < 1 < 4$ (ii) $-9 < -2 < 0 < 2 < 5$
 (iii) $-32 < -28 < 0 < 1 < 28$ (iv) $-60 < -20 < 0 < 20 < 40$
 9. (i) $37 > 10 > 8 > 0 > -2 > -131$ (ii) $50 > 0 > -3 > -9 > -54$
 (iii) $35 > 0 > -6 > -72 > -82$ (iv) $412 > 101 > -8 > -366 > -516$
 10. (i) $[-50] = 50$ (ii) $3 + [-7] = 7 + 3 = 10$
 (iii) $0 - [-6] = -6$ (iv) $[-7] + 0 = 7 + 0 = 7$
 (v) $[-6] - 5 = 6 - 5 = 1$ (vi) $19 - [-4] = 19 - 4 = 15$
 11. (i) -419 (ii) -1 (iii) 5 (iv) -2
 12. (i) -618 (ii) -2 (iii) 41 (iv) -8

Exercise - 4.2

$$4 + (-7) = -3$$



(iii), (iv), (v), and (vi) similar as (i) and (ii) So, students these questions do your self.

2. (i) $14 + (-19)$ (ii) $(-15) + (-18)$
 $= (14) + (-19)$ $= (-15) + (-18)$
 $= 14 - 19$ $= -33$
 $= -5$
 (iii) $(-30) + (20)$ (iv) $(-450) + (350)$
 $= -(30 \div 20)$ $= -(450 - 350)$
 $= -10$ $= -100$
 (v) $(-680) + (-80)$ (vi) $(-417) - (-100)$
 $= -(680 + 80)$ $= -(417 + 100)$
 $= -760$ $= -817$
 3. (i) $200 + (-55) + (-45)$ (ii) $706 + (-3) + (2) + (-5)$
 $= 200 + [(-55) + (-45)]$ $= 706 + -(3 + 5) + 2$
 $= 200 + [-100]$ $= 706 + -(+5) + 2$
 $= 200 - 100$ $= 698 + 2 = 700$
 $= 100$
 (iii) $1 + (-418) + 418 - 1$ (iv) $652 + (-652) + 0 + (-7)$
 $= (1 + 418) + (-418) + (-1)$ $(652 + 0) + (-652) + (-7)$
 $= 419 - 419 = 0$ $= 652 - 659$
 $= -7$
 (4) (i) $x + 1 = 0$ (ii) $x - 7 = 0$
 $x = -1$ $x = +7$

- (iii) $x+0=0$
 $x=0$
 (v) $x+(-8)=0$
 $x=+8$
- (iv) $-2+x=0$
 $x=-2$
 (vi) $2-x=0$
 $x=-2$
5. (i) 11 (ii) -17 (iii) 1 (iv) 1-10
6. (i) $(-2)+(-7)+(-685)$
 $=-(2+7+685)$
 $=-694$
- (ii) $231+(-275)+(-381)$
 $=(231+730)+(-381)+(-275)$
 $=961-(381+275)$
 $=961-656=305$
- (iii) and (iv) similar as (i) and (ii), So students these questions do your self
- (7) (i) 4 (ii) 0 (iii) 17 (iv) 5, 6 (v) 0 (vi) 0

Exercise 4.3

1. (i) $23-10=13$ (ii) $15=(-24)=15-24=-9$
 (iii) $-42-(+19)=-42+19=-23$
 (iv) $-63-(-47)=-63+47=-16$
2. (i) $12+(-3)-4-(-4)=12-(3+4+4)=12-11=1$
 (ii) $(-67)+(-76)+(-4)-(-10)-67-76-4+10=-147+10=-137$
 (iii) $(-13)+(-11)+15-(-10)=-13-11+15+10$
 $=-24+15-(-10)-24+25$
 $=-(24+10)+15=1$
 $=-34+15=-19$
- (iv) $25-(-20)+(-25)+(-20)=0$
3. (i) 8 (ii) 217 (iii) 0 (iv) 9 (v) 9
4. (i) = (ii) = (iii) < (iv) > (v) > (vi) >
5. (i) 19 (ii) -480 (iii) 787 (iv) -343 (v) 299 (vi) -1001
6. (i) -1 (ii) -2
7. $(21-240)-(-41+53)$
8. -200

objective type questions

1. (iii) 2. (iv) 3. (ii) 4. (i) 5. (iv)
6. (ii) 7. (i) 8. (ii) 9. (i) 10. (ii)

True/False

1. (i) True (ii) False (iii) True (iv) False (v) False (vi) True

Fill in the blanks

1. 16 2. Positive 3. less 4. -10 5. 5°C below zero





Chapter Assessment

1. (i) A profit of ₹ 6 (ii) Gaining a weight of 5 kg (iii) 19 km above sea-level
 (iv) 5°C above freezing point (v) A deposit of ₹ 200 (vi) spending ₹ 500
2. (i) +1200 (ii) -500 (iii) +8 (iv) +27 (v) +100 (vi) -1000
3. (i) -1 (ii) 1 (iii) 0 (iv) 2
4. (i) 1, 2, 3, 4, 5 (ii) -4, -3, -2, -1 (iii) -2, -1, 0, 1, 2 (iv) -7
5. (i) $-6 < -1 < 0 < 6 < 9$ (ii) $-99 < -22 < 5 < -2 < 0 < 13$
 (iii) $-500 < -362 < -16 < 16 < 166$ (iv) $-514 < -364 < -6 < 103 < 414$
6. (i) $8 > 5 < 0 < -1 < -2$ (ii) $7 > 4 > 0 > 8 > 2 > 0 > -7 > -15$
7. (i) 8 (ii) -4 (iii) 5 (iv) 0 (v) 6 (vi) 20

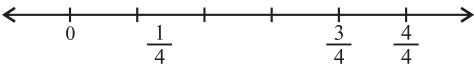
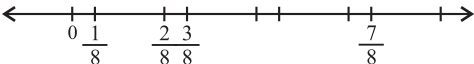
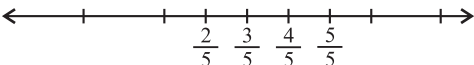
8. (i) > (ii) < (iii) > (iv) > (v) > (vi) <
 9. (i) 4 (ii) 5 (iii) -15 (iv) 0 (v) -23 (vi) -2
 10. (i) 53 (ii) 0 (iii) 65 (iv) -18 (v) 984 (vi) 76
 11. (i) -2 (ii) -6 (iii) 9 (iv) 0 (v) 10
 12. (i) 0 (ii) 28 (iii) -796 (iv) 100
 13. 355 14. 112 15. 21678 16. 235 m

Chapter - 5 Fractions

Exercise 5.1

1. (i) $\frac{10}{20}$ (ii) $\frac{4}{9}$ (iii) $\frac{1}{4}$ (iv) $\frac{2}{4}$ (v) $\frac{3}{8}$ (vi) $\frac{6}{16}$
 2. Do yourself 3. (i) No (ii) Yes
 4. (ii) $\frac{3}{7}$ 
 (iii) $\frac{6}{7}$ 
 (iv) $\frac{5}{8}$ 
 (v) $\frac{7}{9}$ 
 5. (i) $\frac{2}{3} \times 15 = \frac{30}{3} = 10$ pens
 (ii) $\frac{2}{3} \times 27 = \frac{54}{3} = 18$ balls
 (iii) $\frac{2}{3} \times 36 = \frac{72}{3} = 26$ balloons
 6. The fraction snigini eat = $\frac{3}{8}$
 The fraction is left = $\frac{5}{8}$
 7. $\frac{1}{6}$ 8. $\frac{2}{5}$

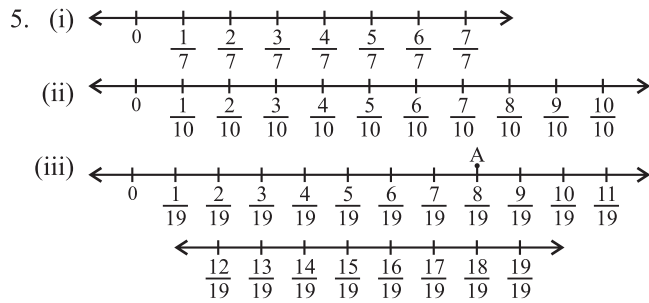
Exercise 5.2

1. (i) 
 (ii) 
 (iii) 
2. Improper fraction = $\frac{7}{5}, \frac{71}{31}, \frac{35}{3}$ Unit fraction $\frac{1}{5}, \frac{1}{5}$
 Proper fraction = $\frac{7}{11}, \frac{5}{7}, \frac{11}{13}, \frac{5}{33}, \frac{31}{41}, \frac{22}{23}$
 Mixed fraction = $2\frac{1}{3}, 2\frac{1}{5}, 11\frac{1}{5}, 4\frac{5}{7}$
3. (i) $3\frac{2}{3} = \frac{11}{3}$ (ii) $3\frac{1}{4} = \frac{13}{4}$ (iii) $\frac{15}{4}$
 (iv) $4\frac{1}{2} = \frac{9}{2}$ (v) $5\frac{1}{2} = \frac{11}{2}$ (vi) $\frac{13}{3}$
 4. (i) $\frac{9}{4} = 2\frac{1}{4}$ (ii) $\frac{8}{5} = 1\frac{3}{5}$ (iii) $\frac{3}{2} = 1\frac{1}{2}$

$$(iv) \frac{5}{4} = 1 \frac{1}{4}$$

$$(v) \frac{16}{5} = 3 \frac{1}{5}$$

$$(vi) \frac{8}{3} = 2 \frac{2}{3}$$



6. (i) If the numerator is less than denominator
(ii) If the numerator is equal to denominator
(iii) If the numerator is greater than denominator

7. $\frac{2}{6}$, $\frac{3}{7}$, $\frac{4}{8}$

8. $\frac{9}{2}$, $\frac{10}{3}$, $\frac{11}{4}$, $\frac{12}{5}$, $\frac{13}{6}$

Exercise 5.3

1. (i) $\frac{1}{2}$

(ii) $\frac{4}{6}$

(iii) $\frac{3}{9}$

(iv) $\frac{2}{8}$

(v) $\frac{3}{4}$ (a) $\frac{3}{9}$

$\frac{2}{4}$ (b)

$\frac{6}{8}$ (c)

$\frac{4}{6}$ (d)

$\frac{2}{8}$ (e)

(i) b

(ii) d

(iii) a

(iv) e

(v) c

2. (i) $\frac{2}{6}$, $\frac{3}{9}$, $\frac{4}{12}$, $\frac{5}{15}$

(ii) $\frac{4}{10}$, $\frac{6}{15}$, $\frac{8}{20}$, $\frac{10}{25}$

(iii) $\frac{8}{22}$, $\frac{12}{33}$, $\frac{16}{44}$, $\frac{20}{55}$

(iv) $\frac{6}{14}$, $\frac{9}{21}$, $\frac{12}{28}$, $\frac{5}{35}$

(v) $\frac{2}{4}$, $\frac{3}{6}$, $\frac{4}{8}$, $\frac{5}{10}$

3. (i) not equivalent

(ii) equivalent

(iii) equivalent

(iv) not equivalent

4. (i) $\frac{4}{30}$

(ii) $\frac{18}{30}$

(iii) $\frac{25}{30}$

(iv) $\frac{21}{30}$

5. (i) $\frac{24}{84}$

(ii) $\frac{25}{27}$

(iii) $\frac{24}{32}$

(iv) $\frac{24}{40}$

6. (i) $\frac{2}{3} = \frac{10}{15} = \frac{6}{9} = \frac{12}{6}$

(ii) $\frac{2}{7} = \frac{14}{49} = \frac{6}{21} = \frac{10}{35}$

(iii) $\frac{1}{5} = \frac{2}{10} = \frac{3}{15} = \frac{5}{25}$

(iv) $\frac{5}{7} = \frac{10}{14} = \frac{15}{21} = \frac{20}{28}$

7. (i) $\frac{3}{4}$

(ii) $\frac{2}{3}$

(iii) $\frac{1}{2}$

(iv) $\frac{7}{8}$

Exercise 5.4

1. (i) <

(ii) <

(iii) >

(iv) =

2. (i) $\frac{1}{7} < \frac{3}{7} < \frac{4}{7} < \frac{6}{7} < \frac{10}{7}$

(ii) $\frac{1}{11} < \frac{3}{11} < \frac{4}{11} < \frac{6}{11} < \frac{7}{11}$

(iii) $\frac{8}{24} < \frac{8}{15} < \frac{8}{13} < \frac{8}{11} < \frac{8}{9}$

(iv) $\frac{1}{5} < \frac{2}{5} < \frac{3}{5} < \frac{4}{5} < \frac{6}{5}$

3. (i) $\frac{1}{2} > \frac{1}{3} > \frac{7}{30} > \frac{2}{15}$

(ii) $\frac{9}{10} > \frac{4}{5} > \frac{1}{2} > \frac{3}{15}$

$$(iii) \frac{7}{11} > \frac{7}{33} > \frac{3}{22} > \frac{5}{66} \qquad (iv) \frac{7}{4} > \frac{3}{8} > \frac{5}{32} > \frac{1}{16}$$

$$4. (i) \frac{1}{8} < \frac{3}{8} < \frac{4}{8} < \frac{6}{8} \qquad (ii) \frac{3}{9} < \frac{4}{9} < \frac{6}{9} < \frac{8}{9}$$

$$5. \text{Deepak ate the cake} = \frac{2}{5}$$

$$\text{Amit ate the cake} = \frac{3}{10}$$

$$\text{LCM of 5 and 10} = 10$$

$$\therefore \frac{2}{5} = \frac{2 \times 2}{5 \times 2} = \frac{4}{10}$$

$$\frac{3}{10} = \frac{3 \times 1}{10 \times 1} = \frac{3}{10}$$

$$\therefore 4 > 3$$

$$\frac{2}{5} > \frac{3}{10}$$

So, Deepak ate more cake

$$6. \frac{89}{24} > \frac{33}{24} > \frac{89}{48}$$

7. question same as (5) question so, students do your self.

Exercise 5.5

$$1. (i) \frac{3}{8} + \frac{6}{8} = \frac{3+6}{8} = \frac{9}{8}$$

$$(ii) \frac{5}{11} + \frac{3}{11} = \frac{5+3}{11} = \frac{8}{11}$$

$$(iii) \frac{7}{17} + \frac{5}{17} = \frac{7+5}{17} = \frac{12}{17}$$

$$(iv) \frac{16}{39} + \frac{5}{39} = \frac{16+5}{39} = \frac{21}{39}$$

$$(v) \frac{5}{11} + \frac{6}{11} + \frac{9}{11} = \frac{5+6+9}{11} = \frac{20}{11}$$

$$(vi) \frac{33}{125} + \frac{24}{125} + \frac{22}{125} = \frac{33+24+22}{125} = \frac{79}{125}$$

$$2. (i) \frac{6}{11} - \frac{5}{11} = \frac{6-5}{11} = \frac{1}{11}$$

$$(ii) \frac{24}{31} - \frac{18}{31} = \frac{24-18}{31} = \frac{6}{31}$$

$$(iii) \frac{19}{29} - \frac{5}{29} = \frac{19-5}{29} = \frac{14}{29}$$

$$(iv) \frac{7}{13} - \frac{4}{13} = \frac{7-4}{13} = \frac{3}{13}$$

$$(v) \frac{15}{17} - \frac{3}{17} = \frac{15-3}{17} = \frac{12}{17}$$

$$(vi) \frac{17}{20} - \frac{3}{20} = \frac{17-3}{20} = \frac{14}{20}$$

$$3. (i) \frac{11}{5} + 2\frac{3}{10} + 3 = \frac{11}{5} + \frac{23}{10} + \frac{1}{3}$$

$$= \frac{66+69+10}{30}$$

$$= \frac{145}{30} = \frac{29}{6}$$

$$(ii) 1\frac{3}{7} + 4 + 2\frac{2}{3} = \frac{10}{7} + \frac{1}{4} + \frac{8}{3}$$

$$= \frac{120+21+224}{84}$$

$$= \frac{368}{84} = \frac{92}{21}$$

$$\begin{aligned}
 \text{(iii)} \quad 8\frac{1}{3} + 7\frac{5}{12} + 2\frac{5}{6} &= \frac{25}{3} + \frac{89}{12} + \frac{17}{6} \\
 &= \frac{25 + 89 + 17}{12} \\
 &= \frac{128}{12} = \frac{44}{6} = \frac{22}{3}
 \end{aligned}$$

$$\begin{aligned}
 4. \text{ (i)} \quad 4\frac{1}{2} - 2\frac{1}{3} &= \frac{9}{2} - \frac{7}{3} \\
 &= \frac{27 - 14}{6} = \frac{13}{6}
 \end{aligned}$$

$$\begin{aligned}
 \text{(ii)} \quad 7\frac{1}{3} - 3\frac{5}{6} &= \frac{22}{3} - \frac{23}{6} \\
 &= \frac{44 - 23}{6} = \frac{21}{6} = \frac{7}{2}
 \end{aligned}$$

$$\begin{aligned}
 \text{(iii)} \quad 9 - 3\frac{2}{7} &= \frac{9}{1} - \frac{23}{7} \\
 &= \frac{63 - 23}{7} = \frac{40}{7} = 5\frac{5}{7}
 \end{aligned}$$

$$\begin{aligned}
 \text{(iv)} \quad 1\frac{4}{5} - 1\frac{1}{10} &= \frac{9}{5} - \frac{11}{10} \\
 &= \frac{18 - 11}{10} = \frac{7}{10}
 \end{aligned}$$

$$\begin{aligned}
 \text{(v)} \quad 2\frac{7}{8} - 1\frac{1}{4} &= \frac{23}{8} - \frac{5}{4} \\
 &= \frac{23 - 10}{8} = \frac{13}{8} = 1\frac{5}{8}
 \end{aligned}$$

$$\begin{aligned}
 \text{(vi)} \quad 2\frac{4}{5} - 1\frac{1}{5} &= \frac{14}{5} - \frac{6}{5} \\
 &= \frac{14 - 6}{5} = \frac{8}{5} = 1\frac{3}{5}
 \end{aligned}$$

$$\begin{aligned}
 5. \text{ (i)} \quad \frac{18}{17} + \frac{13}{17} + \frac{1}{17} - \frac{11}{17} &= \left(\frac{8}{17} + \frac{3}{17} + \frac{1}{17} \right) - \frac{11}{17} \\
 &= \left(\frac{8 + 3 + 1}{17} \right) - \frac{11}{17} \\
 &= \frac{12}{17} - \frac{11}{17} = \frac{12 - 11}{17} = \frac{1}{17}
 \end{aligned}$$

$$\begin{aligned}
 \text{(ii)} \quad 3 - \frac{11}{12} + \frac{5}{8} &= \frac{3}{1} - \left(\frac{11}{12} + \frac{5}{8} \right) \\
 &= \frac{3}{1} - \left(\frac{22 + 15}{24} \right) \\
 &= \frac{3}{1} - \left(\frac{37}{24} \right) \\
 &= \frac{3}{1} - \frac{37}{24} = \frac{72 - 37}{24} \\
 &= \frac{35}{24} = 1\frac{12}{24}
 \end{aligned}$$

$$\begin{aligned}
 \text{(iii)} \quad 4 \frac{1}{3} + 3 \frac{1}{9} - 6 \frac{1}{6} &= \left(\frac{13}{3} + \frac{28}{9} \right) - \frac{37}{6} \\
 &= \left(\frac{39+28}{9} \right) - \frac{37}{6} \\
 &= \frac{67}{9} - \frac{37}{6} = \frac{67-37}{18} \\
 &= \frac{30}{18} = \frac{10}{6} = 1 \frac{4}{6}
 \end{aligned}$$

$$\begin{aligned}
 \text{(vi)} \quad 4 \frac{6}{7} - 2 \frac{2}{3} - \frac{20}{21} &= \left(\frac{34}{7} - \frac{8}{3} \right) - \frac{20}{21} \\
 &= \left(\frac{102-56}{21} \right) - \frac{20}{21} \\
 &= \frac{46}{21} - \frac{20}{21} = \frac{46-20}{21} = \frac{26}{21} \\
 &= 1 \frac{5}{21}
 \end{aligned}$$

$$\begin{aligned}
 \text{(v)} \quad 6 \frac{1}{8} + 4 \frac{5}{12} - 3 \frac{1}{2} &= \left(\frac{49}{8} + \frac{53}{12} \right) - \frac{7}{2} \\
 &= \left(\frac{147+106}{24} \right) - \frac{7}{2} \\
 &= \frac{253}{24} - \frac{7}{2} \\
 &= \frac{253-84}{24} = \frac{169}{24} = 7 \frac{1}{24}
 \end{aligned}$$

(vi) to (ix) as similar as above (i) to (v) questions, So, do yourself.

6. Anurag spent time on painting his toy = $\frac{1}{3}$ of an hour

He spent time on polishing his shoes = $\frac{1}{6}$

He spend total time = $\frac{1}{3} + \frac{1}{6}$

$$= \frac{2+1}{6} = \frac{3}{6} = \frac{1}{2} \text{ hours}$$

7. Adila mixes of water = $\frac{1}{2} l$

And the quantity of orange squash = $\frac{1}{8} l$

$$\begin{aligned}
 \text{The quantity of total mixture} &= \frac{1}{2} + \frac{1}{8} \\
 &= \frac{1+1}{8} = \frac{4+1}{8} = \frac{5}{8} l
 \end{aligned}$$

8. Mr. Agrwal bought sweets = $\frac{1}{2}$ kg

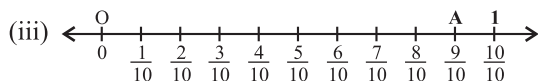
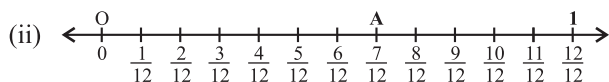
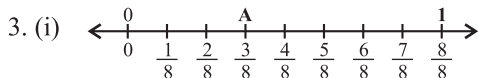
The sweets left after his children eat = $\frac{1}{10}$ kg

$$\begin{aligned} \text{The children eat sweets} &= \frac{1}{2} - \frac{1}{10} \\ &= \frac{5-1}{10} = \frac{4}{10} = \frac{2}{5} \text{ kg} \end{aligned}$$

(9), (10), (11) and (12) is similar as (6), (7) and (8), So, these questions do your self.

Chapter Assessment

1. (i) $\frac{1}{3}$ 2. (i) $\frac{1}{3}$ (ii) $\frac{1}{4}$ (iii) $\frac{1}{10}$



4. (i) $\frac{2}{3}, \frac{2}{7}$ (ii) $\frac{4}{5}, \frac{4}{9}$ (iii) $\frac{1}{3}, \frac{1}{7}$ (iv) $\frac{2}{7}, \frac{2}{1}$

5. (i) $5\frac{2}{3}$ (ii) $3\frac{1}{2}$ (iii) $13\frac{2}{4}$ (iv) $10\frac{5}{8}$ (v) $2\frac{3}{5}$

6. (i) $\frac{17}{7}$ (ii) $\frac{48}{5}$ (iii) $\frac{35}{4}$ (iv) $\frac{130}{11}$ (v) $\frac{531}{13}$

7. (i) $\frac{54}{63}$ (ii) $\frac{54}{78}$ (iii) $\frac{8}{5}$ (iv) $\frac{27}{18}$

8. (i) $\frac{1}{5}$ (ii) $\frac{2}{9}$ (iii) $\frac{1}{3}$ (iv) $\frac{13}{17}$

9. (i) 28 (ii) 20 (iii) 20 (iv) $\frac{4}{10}$ (v) $\frac{8}{21}$ (vi) $\frac{6}{6}$

10. (i) $10\frac{17}{28}$ (ii) $14\frac{34}{63}$ (iii) $2\frac{13}{18}$ (iv) $9\frac{1}{105}$

12. 20 13. $\frac{5}{12}$ 14. $\frac{1}{4}$ 15. $\frac{15}{12}$

Chapter - 6 Decimals

Exercises - 6.1

- (1) (i) Three point five seven four (ii) Thirty seven point zero eight
 (iii) Zero point nine eight (iv) Nine point eight six
 (v) One point one three (vi) Nine point zero zero one
 (vii) zero point one two three (viii) four hundred fifty six point seven eight nine
2. (i) 4.09 (ii) 0.489 (iii) 126.7
 (iv) 98.07 (v) 18.479 (vi) 600.05

3.

Places	Thousands	Hundreds	Tens	Ones	Decimals	Tenths	Hundredths	Thousands
Value of Places of numbers	1000	100	10	1	.	$\frac{1}{10}$	$\frac{1}{100}$	$\frac{1}{1000}$
(i) 4.89				4	.	8	9	
(ii) 97 thousand					.	0	9	7
(iii) 11.456			1	1	.	4	5	6
(iv) 7 hundredths					.	0	7	
(v) 3 tenths					.	3		
(vi) 1.003					.	0	0	3

4 as similar as 3. So do your self.

5. (i) $6 + \frac{5}{10} + \frac{3}{100}$

(ii) $7\frac{1}{10} + \frac{7}{10} + \frac{5}{1000}$

(iii) $200 + 30 + 5 + \frac{2}{10} + \frac{3}{100} + \frac{8}{1000}$

(iv) $90000 + 600 + 700 + 8 + \frac{8}{100} + \frac{6}{1000}$

(v) $7000 + 600 + 50 + 9 + \frac{2}{10} + \frac{2}{100}$

(vi) $70 + 1 + \frac{7}{10} + \frac{5}{1000}$

6. (i) 800

(ii) 0.8

(iii) 8

(iv) 0.08

(v) 0.008

(vi) 8

7. (i) 10, 100, 9

(ii) 9, 100, 1000

(iii) 8, 100, 9

(iv) 6, 100, 9

8. (i) 0.007

(ii) 0.013

(iii) 0.678

(iv) 0.0043

(v) 0.081

(vi) 6000.402

9. (i) 0.36

(ii) 0.40

(iii) 0.20

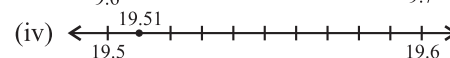
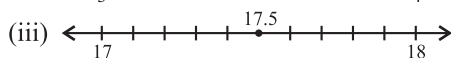
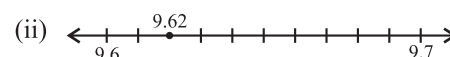
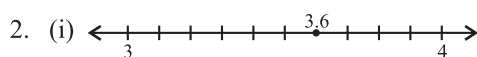
Exercise - 6.2

1. (i) 2.3

(ii) 17.8

(iii) 11.44

(iv) 17.348



3. (i) $29.3 = \frac{293}{10}$

(ii) $105.7 = \frac{1057}{10}$

(iii) $0.81 = \frac{81}{100}$

(iv) $3.14 = \frac{314}{100}$

$$(v) 12.38 = \frac{1238}{100} \quad (vi) 0.162 = \frac{162}{1000} \quad (vii) 0.1931 = \frac{1931}{10000} \quad (viii) 112.11 = \frac{11211}{100}$$

4. (i) $\frac{1279}{10} = 127.9$ (ii) $\frac{1040}{100} = 10.40$
 (iii) $\frac{3}{100} = 0.03$ (iv) $\frac{60}{1000} = 0.060$
 (v) $\frac{7749}{1000} = 7.749$ (vi) $\frac{3}{5} = \frac{3 \times 2}{5 \times 2} = \frac{6}{10}$
 (vii) $\frac{16}{25} = \frac{16 \times 4}{25 \times 4} = \frac{64}{100} = 0.04$ (viii) $\frac{52}{40} = \frac{52 \times 5}{40 \times 5} = \frac{260}{200} = 1.3$

5.(i) and (iii) are like decimals because all the decimals have equal number of decimals places i.e. 3 and 1 respectively.

6. (i) 4.833, 15.840, 262.800 (ii) 2.93, 70.70, 2.90 (iii) 7.800, 42.780, 73.985
 7. (i) $1.678 < 1.687$ (ii) $2.40 < 2.41$ (iii) $5.1 > 5.001$
 (iv) $71.005 < 71.05$ (v) $21.6785 < 21.768$ (vi) $75.125 < 75.218$
 (vii) $176.16 < 176.166$ (viii) $221.768 > 221.678$
 8. (i) $<$ (ii) $<$ (iii) $=$ (iv) $=$ (v) $>$ (vi) $>$
 9. (i) $3.275 > 3.524 < 3.572 < 3.725$ (ii) $7.018 < 7.081 < 7.108 < 7.801$
 10. (i) $0.9 > 0.7 > 0.2 > 0.1$ (ii) $0.97 > 0.43, 0.29, 0.04$

Exercise - 6.3

1. (i) ₹ 4.50 (ii) ₹ 6.60 (iii) 136.35m (iv) 9.8 cm (v) 70.5 km (vi) 5.8 kg

2. (i)
$$\begin{array}{r} 14.354 \\ +9.109 \\ \hline 23.463 \end{array}$$
 (ii)
$$\begin{array}{r} 67.000 \\ +3.751 \\ \hline 70.751 \end{array}$$
 (iii)
$$\begin{array}{r} 71.290 \\ 1.369 \\ +88.800 \\ \hline 161.459 \end{array}$$

(iv)
$$\begin{array}{r} 201.340 \\ 13.646 \\ +136.751 \\ \hline 351.737 \end{array}$$
 (v)
$$\begin{array}{r} 181.265 \\ 349.127 \\ 1.111 \\ \hline 531.50 \end{array}$$
 (vi)
$$\begin{array}{r} 291.265 \\ 107.177 \\ 354.286 \\ \hline 752.628 \end{array}$$

3. (i)
$$\begin{array}{r} 7.2 \\ -1.6 \\ \hline 5.6 \end{array}$$
 (ii)
$$\begin{array}{r} 9.80 \\ -7.25 \\ \hline 2.55 \end{array}$$
 (iii)
$$\begin{array}{r} 42.760 \\ -36.285 \\ \hline 6.475 \end{array}$$

(iv)
$$\begin{array}{r} 19.285 \\ -0.764 \\ \hline 18.521 \end{array}$$
 (v)
$$\begin{array}{r} 0.900 \\ 0.285 \\ \hline 0.615 \end{array}$$
 (vi)
$$\begin{array}{r} 0.540 \\ -0.267 \\ \hline 0.273 \end{array}$$

4. (i) $28.4 - 2.66 + 2.35$
 $= (28.4 - 2.66) + 2.35$
 $= 25.74 + 2.35$
 $= 28.09$
- (ii) $2.83 - 1.98 + 99.8 - 6.5$
 $= (2.83 - 1.98) + (99.8 - 6.5)$
 $= 0.85 + 93.3 = 94.15$
- (iii) $75.2 - 8.68 + 1.25 - 2.5$
 $(75.2 - 8.68) + (1.25 - 2.5)$

$$= 66.52 - 1.25 = 65.27$$

(iv) $77.6 - 35.28 + 78.75$
 $= (77.6 - 35.28) + 78.75$
 $= 42.32 + 78.75 = 121.05$

5.
$$\begin{array}{r} 7.000 \\ -3.189 \\ \hline 3.811 \end{array}$$

6. The sum =
$$\begin{array}{r} 14.280 \\ + 11.219 \\ \hline 25.499 \end{array}$$

The difference =
$$\begin{array}{r} 14.280 \\ 11.219 \\ \hline 3.061 \end{array}$$

8.
$$\begin{array}{r} 16.875 \\ 73.75 \\ + 36.8 \\ \hline 127.425 \end{array}$$

9.
$$\begin{array}{r} 9.375 \\ 6.250 \\ + 23.900 \\ \hline 39.025 \end{array}$$

10.
$$\begin{array}{r} 75.56 \\ -28.75 \\ \hline 46.81 \end{array}$$

The sum greater than their difference

$$\begin{array}{r} 25.499 \\ - 3.061 \\ \hline 22.438 \end{array}$$

7. Do your self

Objective type questions

- (1) (iv) (2) i (3) iv (4) iii (5) ii (6) ii
 (7) iii (8) i (9) i (10) iv

Fill in the blanks

- (1) 70,1003 (2) less (3) 6+ (4) 15.05
 (5) $\frac{1}{500}$ (6) thousandths

Match the following

- (1) d (2) a (3) e (4) f (5) b (6) c

Chapter Assessment

1. (i) 8.650 (ii) 402.680 (iii) 60.035 (iv) 321.802
 (v) 23.241
2. (i) 0.81 (ii) 9034.7 (iii) 1.004 (iv) 100.062
 (v) 0.45 (vi) 4321.010
3. (i) 685.29 (ii) 80.16 (iii) 76.60.605 (iv) 0975
4. (i) 3.1 (ii) 15.03 (iii) 7.019 (iv) 5.007
5. (i) $\frac{77189}{10000}$ (ii) $\frac{5013}{400}$ (iii) $\frac{6009}{80}$ (iv) $\frac{21365}{1000}$
6. (i) 0.4 (ii) 2.79 (iii) 0.046 (iv) 3.6717
7. (i) $20.7 > 18.7$ (ii) $67.52 > 67.12$ (iii) $1728.69 > 1728.68$
 (iv) $778.678 > 778.67$
8. (i) $0.061 < 0.127 < 0.623 < 0.632 < 0.712$ (ii) $3.387 < 3.783 < 3.837 < 3.873 < 3.877$
9. (i) $0.3200 > 0.032 > 0.0302 > 0.0032$ (ii) $41.101 > 41.001 > 40101 > 40.011$
10. (i) 89.545 (ii) 108.63 (iii) 1198.543 (iv) 0.392

- (v) 198.85 (vi) 99.991
 11. 3.5 12. 3.57 13. 9.6m 14. 24cm
 15. 12kg 16. 0.353

Chapter - 7 Introduction of Algebra

Exercise - 7.1

1. (i)

$\frac{2}{3}$	$\frac{5}{8}$	$\frac{2}{7}$	$\frac{4}{5}$	12	8	40	$\frac{8}{9}$	$\frac{1}{3}$	x
$\frac{1}{3}$	$\frac{5}{16}$	$\frac{1}{7}$	$\frac{2}{5}$	6	4	20	$\frac{4}{9}$	$\frac{1}{6}$	$\frac{x}{2}$

(ii)

0.34	3.5	7.8	4.2	7	5.2	8	6.6	x
0.17	1.75	3.9	2.1	3.5	2.6	4	3.3	$\frac{x}{2}$

(2) (i)

Number of Dots	4	6	8	12	n
Number of Trapezium	1	2	3	5	$\frac{n-2}{2}$

(ii)

Number of Houses	1	2	3	4	10	20	n
Number of Matchstick	6	11	16	21	51	101	5n+1

(iii)

Number of N	1	2	3	4	n
Number of Matchstick	3	5	7	9	2n+1

- (3) (i) $2n+1$ (ii) $7n-2$ (iii) $7n$ (iv) $5n+1$

Chapter - 7.2

- (1) (i) $a-b=10$ (ii) $\frac{2pq}{r}$ (iii) $x \neq 2y$
 (iv) $4m > 7$ (v) $15-10=5$ (vi) Since $2x=16, x=8$
 (vii) Since $4y=40, y=10$ (viii) $\frac{2pq}{a+b}=5$ (ix) $x-y < 2+10$
 (x) $9 \times 2 \neq 10$
2. (i) x^{10} (ii) $4x^3y^4$ (iii) $8p^2q^2r^3s^4$
 (iv) $16x^3y^3+x^3z^2$ (v) z^{37} (vi) $4pq+r^3$
3. (i) $x \times x \times x \times x \times \dots \dots \dots$ 19 times
 (ii) $\frac{3}{4} \times x \times x \times y \times z$
 (iii) $a \times a \times a \times b \times b \times c$
 (iv) $(-a) \times (-a) \times (-a) \times (-a)$
 (v) $2x \times 2x \times 2x$
 (vi) $(-z) \times (-z) \times \dots \dots \dots$ 30 times

4. (i) $l = 2b$ (ii) $d = vt$ (iii) $P = SP - CP$ (iv) $y = 2x + 2$ (v) $x + y > 2$
 5. $x \times (q - p)$ 6. $+y$ 7. $C = 4a$

Exercise - 7.3

1. (i) $3x^2 + 5xy + 8 = 3x^2, 5xy, 8$
 (ii) $4x^2 + 9y^2 - 6z$ (iii) $x^2 - z^2 = x^2, z^2$
 $4x^2, 9y^2, -6z$
- (2) (i) Binomial (ii) Binomial (iii) Monomial (iv) Trinomial
 (v) Quadrinomial (vi) Monomial (vii) Quadrinomial (viii) Monomial
 (ix) Binomial (x) Trinomial (xi) Quadrinomial
3. (i) y^2 (ii) y^2 (iii) $8x^2$ (iv) $x^2y^2z^2$
4. (i) -6 (ii) $\frac{8}{13}$ (iii) $-\frac{1}{7}$ (iv) 6
5. (i) -9 (ii) 17 (iii) -17 (iv) 18
6. (i) $2x^2, 3x^2$ (ii) $4y^3, y^3$ (iii) $4x^2y, 5x^2y$ (iv) $x^2, 4x^2$
7. (i) $3x + 2y - 3z = (3 \times 1) + (2 \times 2) - (3 \times 0) = 3 + 4 - 0 = 7 - 0 = 7$
 (ii) $x^3 + y^3z^3 = (1^3) + (2^2) + (0^3) = 1 + 8 + 0 = 9 + 0 = 9$
 (iii) $2x^2y - 3xyz = 2(1)^2 \times (2) - 3(1) \times (2) \times (0) = (2 \times 2)6 - (3 \times 0) = 4 - 0 = 4$
 (iv) $x + y - 6z = 1 + 2 - (6 \times 0) = 3 - 0 = 3$
8. $A = (x + y + zy) - (x + y)^2 = (-1 + 1 - 1)^1 - (-1 + 1)^{+1}$
 $= -1 + 1(-1) = -1$
 $B = (y + z)^{3y + x + z} (-x + z)^{+1}$
 $= (1 - 1)^{3 - 1 - 2} - (-1 - 1)$
 $= (0)^{3 - 3} - (2)$
 $= (2)^{+1}$
 $= 1 + 2 = 3$
 $(A + B)^{A + B} = (-1 - 3)(-1 - 3) = (-4)(-4) = 4$

Exercise - 7.4

1. (i) $2a^2b - 2a^2b, 6a^2b, 7a^2b = (aa^2b - 2a^2b + 6a^2b + 7a^2b)$
 $= a^2b(2 - 2 + 6 + 7) = a^2b(13) = 13a^2b$
 (ii) $-p^2, 6p^2, 9p^2$
 $= (-p^2 + 6p^2 + 9p^2)$
 $= p^2(-1 + 6 + 9) = p^2(5 + 9) = 14p^2$
 (iii) and (iv) as similar as (i) and (ii) so, do your self
2. (i) $7x + 3y$ and $-4x - 2y = (7x - 4x) + (3y - 2y) = 3x + y$
 (ii) $(3a - 2b + c + 3) + (a + 3b - 2c - 4) = 3a - 2b + c + 3 + a + 3b - 2c - 4 = 4a + b - c - 1$
 (iii) $a^2 + 2ab + b^2 + a^2 - 2ab + b^2 = 2a^2 + 2b^2 = 2(a^2 + b^2) = 2a^2 + 2b^2$
 (iv) $xy - yz + 2 + 2yz + xy - 7 + 3xy + 3yz^3 + 3 = 3yz^3 + 5xy + yz - 2$
3. (i) $3p - 2q + 8r$
 $-9p + 7q - 7r$
 $\underline{-6p - 2q + r}$
 $\underline{-12p + 3q + 2r}$
 (ii) $a^2 - 2b^2 + 7$
 $-9a^2 - 5b^2 - 1$
 $\underline{-2a^2 - 3b^2}$
 $\underline{-6a^2 + 6}$

- (iii)
$$\begin{array}{r} -3x^2y + 7xy^2 - 1 \\ 13xy - xy^2 + 5 \\ \hline 8x^2y - 7xy - 4 \\ \hline 5x^2y + 6xy + 6xy^2 \end{array}$$
- (iv)
$$\begin{array}{r} 9x^2 - 7y^2 + xy \\ -8x^2 + 9y^2 + 3xy \\ \hline -2y^2 + xy \\ \hline x^2 - 5xy \end{array}$$
4. (i)
$$\begin{aligned} (2x - 3y + 4z) - (4x - 6y - z) \\ = 2x - 3y + 4z - 4x + 6y + z \\ = 2x + 3y + 5z \end{aligned}$$
- (ii)
$$(2x - 4y) - (-4x + 3y) = 2x - 4y + 4x - 3y = 6x - 7y$$
- (iii)
$$\begin{aligned} 5q^2 - p^2 - 7r - (6p^2 - q^2 + 2r - 9) \\ = (6p^2 - q^2 + 2r - 9) - (5q^2 - p^2 - 7r) \\ = 6p^2 - q^2 + 2r - 9 - 5q^2 + p^2 + 7r \\ = 7p^2 - 6q^2 + 9r - 9 \end{aligned}$$
- (iv)
$$\begin{aligned} (-x - y) - (x + y) \\ = -x - y - x - y \\ = 2x - 2y \end{aligned}$$
- (v)
$$\begin{aligned} (7pqr - 8p + 3) - (10 - 4pqr + 3p) \\ = 10 - 4pqr + 3p - (7pqr - 8p + 3) = 10pqr + 3p - 7pqr + 8p - 3 = 7 - 11pqr + 11p \end{aligned}$$
- (vi)
$$\begin{aligned} (5x^3 + 3x^2 - x - 3) - (5x^2 - 3x^2 + 2x - 3) \\ = (5x^3 - 3x^2 + 2x - 3) - (5x^2 + 3x^2 - x - 3) \\ = 5x^3 - 3x^2 + 2x - 3 - 5x^2 - 3x^2 + x + 3 \\ = -6x^2 + 3x \end{aligned}$$
5.
$$\begin{aligned} (x^2 + x + 1) - (x^2 - x + 1) - (-x^2 - x + 1) = (x^2 + x + 1) + (x^2 - x + 1) - (x^2 - x + 1) \\ = 2x^2 + 2 + x^2 + x - 1 = 3x^2 + x + 1 \end{aligned}$$
6.
$$\begin{aligned} (2a + 3b) + (a - 2b + c) + (-a + 2c) + 4a + 2b - 5 \\ = 2a + 3b + a - 2b + c - a + 2c + 4a + 2b - 5 = (6a + 3b + 3c - 5) - (6a - 4b + 8) \\ = (6a - 4b + 8) - (6a + 3b + 3c - 5) \\ = 6a - 4b + 8 - 6a - 3b - 3c + 5 \\ = -7b - 3c + 13 \end{aligned}$$
7.
$$\begin{aligned} (3x^2 + xy + 2y^2) - (x^2 + 3xy + y^2) \\ = 3x^2 + xy + 2y^2 - x^2 - 3xy - y^2 = 2x^2 - 2xy + y^2 \end{aligned}$$
8.
$$(2a^2 + 3b^2) - (3a^2 + 2ab - b^2) = (3a + 2ab - b^2) - (2a^2 + 3b^2) = 3a + 2ab - b^2 - 2a^2 - 3b^2 = a^2 - 4b + 2ab$$
9.
$$(2x^2 - 3y^2) - (4x^2 - 3xy + 5y^2) = 2x^2 - 3y^2 - 4x^2 + 3xy - 5y^2 = -2x^2 - 8y^2 + 3xy$$
10.
$$\begin{aligned} (3x - 5y + 9z) - (5x + 7y + z) \\ = 3x - 5y + 9z - 5x - 7y - z \\ = -2x - 12y + 8z \end{aligned}$$
11.
$$\begin{aligned} (x^2 - y^2 - z^2) - (3x^2 + y^2 + z^2) \\ = x^2 - y^2 - z^2 - 3x^2 - y^2 - z^2 \\ = -2x^2 - 2y^2 - 2z^2 \end{aligned}$$
12.
$$\begin{aligned} (-5x^2 + 9x + 5) - (3x^3 + 4x^2 + 7x + 11) \\ = -5x^2 + 9x + 5 - 3x^3 - 4x^2 - 7x - 11 \\ = 3x^3 - 9x^2 + 2x - 6 \end{aligned}$$

13. $(11x - 7y + 9) - (0)$
 $11x - 7y + 9$
14. $P + Q + R$
 $P = 3x - 2y + z - 1, Q = 2z - 3x + y, R = 2 - P + Q$
 $= 3x - 2y + z - 1 + 2z - 3x + y + 2 - P + Q$
 $= -y + 3z + 1 - P + Q$

Exercise 7.5

- $3x^2y - 7x^2y - (3x^2y - xy^2) - 7x^2y - xy^2$
 $= 3x^2y - 7x^2y - 3x^2y + xy^2$
 $= -7x^2y + xy^2$
- $(2x^3 - 7x^2) + 11x + 6 - \{x^3 - 5x^2 - (-6x + 7)\}$
 $= 2x^3 - 7x^2 + 11x + 6 - \{x^3 - 5x^2 + 6x - 7\}$
 $= 2x^3 - 7x^2 + 11x + 6 - x^3 + 5x^2 - 6x + 7$
 $= x^3 - 2x^2 + 5x + 13$
- $3x^2y - 7xy^2 + \{3x^2y - (6xy^2 + 7x^2y) - x^2y\} + xy^2$
 $= 3x^2y - 7xy^2 + 3xy^2 - 6xy^2 - 7x^2y - x^2y + xy^2$
 $= 3x^2y + 3x^2y - 7x^2y - x^2y - 7xy^2 - 6xy^2 + xy^2$
 $= -2x^2y - 12xy^2 + xy^2$
 $= -2x^2y - 11xy^2$
- $[-6(P+q) + 3\{P+(q-7)+1\}]$
 $= [-6p - 6q + 3\{P+q-6\}]$
 $= -6p - 6q + 3p + 3q - 18$
 $= -3p - 3q - 18$
- $3q - 4p + r - [7q - \{4p + 3q - (r+2) + q\} + 7]$
 $= 3q - 4p + r - [7q - \{4p + 3q - r - 2 + q\} + 7]$
 $= 3q - 4p + r - [7q - 4p - 3q + r + 2 - q + 7]$
 $= 3q - 4p + r - [3q - 4q - 4p + r + 9]$
 $= 3q - 4p + r - 3q + 4p - r - 9$
 $= -9$
- $22a - [15b - 6(4a - 2b) - 6\{3a - 2(b - a)\}]$
 $= 22a - [15b - 24a + 12b - 6\{3a - 2b + 2a\}]$
 $= 22a - [15b - 24a + 12b - 18 + 12b - 12a]$
 $= 22a - [39b - 54a]$
 $= 22a - 39ab + 54a$
 $= 76a - 39b$

Objective type questions

- | | | | | |
|---------|---------|---------|--------|---------|
| (1) iii | (2) ii | (3) iii | (4) iv | (5) iii |
| (6) iv | (7) iii | (8) iv | (9) iv | (10) i |

Fill in the blanks

- | | | | |
|--------------|---------------|----------------|--------------|
| 1. Variables | (2) $xy - 6$ | (3) $-2b - 2c$ | (4) Constant |
| 5. 97 | 6. $6a^2bc^3$ | | |

Match the following

- | | | | | | |
|--------|--------|--------|--------|--------|--------|
| 1. (c) | 2. (a) | 3. (f) | 4. (b) | 5. (d) | 6. (e) |
|--------|--------|--------|--------|--------|--------|

Chapter Assessment

- (i) Four-fifth of the sum of a and 2.
(ii) Four-fifth of a number 'a' added to 2.

- (iii) six less than two-third of number x.
 (iv) three times the sum of z and 5.
2. (i) $d = 2r$ (ii) $\frac{1}{3}4 - 2x$ (iii) $3x + 4y$ (iv) $\frac{x}{10}$
3. (i) 265 (ii) 317 (iii) 359 (iv) $\frac{10}{67}$
- Number of squares 1 2 3 4 5 8 10 x
 Number of dots 4 7 10 13 16 25 31 $3x + 1$
 Number of Matches 4 8 12 16 20 32 40 4x
5. (i) 2, y (ii) 2, 8 (iii) a, a (iv) 2, abcd (v) $\frac{1}{2}, xy$
 (vi) 12, x^2y (vii) $3a^2, \frac{1}{4}$ (viii) $4, y^4$
6. (i) 8ab (ii) $-11a^2b^2$ (iii) $\frac{1}{2}xy$ (iv) (v) -1
7. (i) -1 (ii) 0 (iii) 0 (iv)
8. (i) 0 (ii) $2m^2 + 2mn + 2n^2$ (iii) $a^2b + 7b^2 + 3b^3$ (iv) $a^2b + 7b^2 + 3b^2$
9. (i) $4x^2 - 2ny + 2y^2$ (ii) $za^2 + b^2 - 5$ (iii) $3x^3 + y^3 + 5xy$
 (iv) $x^2 + 2y + 2$ (v) $9x^3y^3 - 11x^2y^2$ (vi) $10a^3y^3 - 11e^2y^2$
10. (i) $x^2 - 5y^2 + 5ny$ (ii) $8a^2 - 4b^2 - 9a$ (iii) $4xy - 9yz + 6zn$ (iv) $-2x^2y - 13xy^2 + xy + 3$
11. $a^2 - 5ab - 3b^2 + 8$ 12. $1 - a + b + c + d$ 13. $-x^4 + x^3 + 3x - 7$
14. $-2x^3 - x - 2(15) - 1$

Chapter 8 Linear Equation in one variable

Exercise - 8.1

1. (i), (iii) and (iv) are equations.
2. (i) $3x - 1 = 4$ (ii) $6y = 3 + y$ (iii) $\frac{1}{2}z - 5 = 5$ (iv) $2(x + 3) = 14$
 (v) $2x + 7 = 13$ (vi) $y = 5$ (vii) $\frac{1}{2}1 - x = 9$ (viii) $5x - 6 = 4$
 (ix) $3x + 9 = 18$ (x) $5\frac{1}{4}3x = -4$
3. (i) 10 increased by thrice a number x is 5
 (ii) Three times y subtracted from nine times of x is 7
 (iii) Three times of a number x added to two times of another number y is o.
5. (i) $5x - 12 = 8$

x	L. H. S.	R. H. S.	Conclusion
1	$5 \times 1 - 12 = -7$	8	L.H.S. \neq R. H. S.
2	$5 \times 2 - 12 = -2$	8	L.H.S. \neq R. H. S.
3	$5 \times 3 - 12 = .3$	8	L.H.S. \neq R. H. S.
4	$5 \times 4 - 12 = 8$	8	L.H.S. \neq R. H. S.

So, the required number $x = 4$

(ii) $\frac{1}{5}x + 5 = 10$

x	L. H. S.	R. H. S.	Conclusion
1	$\frac{1}{5} \times 1 + 5 = \frac{1}{5} + 5 = \frac{26}{5}$	10	L.H.S. \neq R. H. S.
2	$\frac{1}{5} \times 2 + 5 = \frac{2}{5} + 5 = \frac{27}{5}$	10	L.H.S. \neq R. H. S.
5	$\frac{1}{5} \times 5 + 5 = \frac{5}{5} + 5 = \frac{30}{5}$	10	L.H.S. \neq R. H. S.
10	$\frac{1}{5} \times 10 + 5 = \frac{10}{5} + 5 = \frac{35}{5}$	10	L.H.S. \neq R. H. S.

15	$\frac{1}{5} \times 15 + 5 = \frac{15}{5} + 5 = \frac{40}{5}$	10	L.H.S. \neq R.H.S.
20	$\frac{1}{5} \times 20 + 5 = \frac{20}{5} + 5 = \frac{45}{5}$	10	L.H.S. \neq R.H.S.
25	$\frac{1}{5} \times 25 + 5 = \frac{25}{5} + 5 = \frac{50}{5}$	10	L.H.S. \neq R.H.S.

(iii), (iv), (vi), (v), (vi), (vii) and (viii) as similar as (i) and (ii). So, students do your self.

Exercises = 8.2

1. i. $3(x+1)=6$

$$3x+3=6$$

$$3x=6-3$$

$$3x=3$$

$$x = \frac{3}{3} 1$$

$$x=1$$

(iii) $3x+8=5x+2$

$$8-2=5x-3x$$

$$6=2x$$

$$2x=6$$

$$x = \frac{6}{2} 3$$

$$x=3$$

(v) $\frac{x-5}{4}=3$

$$x-5=12$$

$$x=12+5$$

$$x=17$$

2. (i) $x-6=9$

$$x=9+6$$

$$x=15$$

(iii) $\frac{x}{5}=20$

$$x=100$$

(v) $6x+9=-15$

$$6x=-15-9$$

$$6x=-24$$

$$x = \frac{-24}{6} 4$$

$$x=4$$

ii. $4(x-2)=-8$

$$4x-8=-8$$

$$4x=-8+8$$

$$4x=0$$

$$x=0 \times 4$$

$$x=0$$

(iv) $\frac{1}{3}x+11=14$

$$\frac{x+33}{3}=14$$

$$x+33=42$$

$$x=42-33$$

$$x=9$$

(vi) $\frac{x-3}{4}=17$

$$x+3=68$$

$$x=68-3$$

$$x=65$$

(ii) $x+16=18$

$$x=18-16$$

$$x=2$$

(iv) $13x=52$

$$x = \frac{52}{13}$$

$$x=4$$

(vi) $-6x-10=5x+23$

$$-6x-5x=23+10$$

$$-11x=33$$

$$x = \frac{33}{-11} 3$$

$$x=3$$

Objective type questions

- (1) (i) (2) iii (3) iv (4) i (5) iii
 (6) ii (7) iii (8) iv (9) iii (10) iii

Fill in the blanks

- (1) degree (2) Solution (3) -3 (4) divide (5) 21 (6) 3.2

True/False

- (1) True (2) True (3) False (4) False (5) True (6) False

Chapter Assessment

1. (i) $x-5=12$ (ii) $x+6=13$ (iii) $15+x=25$
 (iv) $x+5=21$ (v) $x+16=22$ (vi) $2x+7=13$
 2. (i) $x=2$ (ii) $x=10$ (iii) $x=0$
 3. (i) $x=2$ (ii) $y=8$ (iii) $x=8$ (iv) $x=6$ (v) $x=4$
 (vi) $z=1$ (vii) $x=6$ (viii) $x=17$ (ix) $x=1$
 4. (i) $x=11$ (ii) $y=18$ (iii) $x=8$ (iv) $x=-26$
 5. (i) (a) $(y+5)$ years (b) $(y-3)$ years
 6. (i) $6y$ years (ii) $l=(3b-4)m$ (iii) $l=Sh$ cm $b=(5h-10)$ cm (6) No

Chapter - 9 Ratio, Proportion and Unitary Method**Exercise - 9.1**

1. (i) $200 \text{ m} : 2 \text{ km} = \frac{200 \text{ m}}{2000 \text{ m}} = \frac{1}{10} = 1 : 10$
 (ii) $\text{₹ } 5.50 : \text{₹ } 15.75 = \frac{550}{1575} = \frac{22}{63} = 22 : 63$

(iii) 3 dozen : 4 scores

$$\begin{aligned} &= 1 \text{ dozen} = 12 \\ &3 \text{ dozen} = 36 \\ &4 \text{ scores} = 80 \end{aligned}$$

$$3 \text{ dozen} : 4 \text{ scores} = \frac{36}{80} = \frac{9}{20} = 9 : 20$$

(iv) 2 hours : 15 seconds

$$\begin{aligned} &1 \text{ hour} = 3600 \text{ seconds} \\ &2 \text{ hour} = 7200 \text{ seconds} \end{aligned}$$

$$2 \text{ hours} : 15 \text{ seconds} = \frac{7200}{15} = \frac{480}{1} = 480 : 1$$

(v), (vi), (vii) and (viii) similar as (i) to (iv) so these questions do your self.

2. (i) $25 : 70 = \frac{25}{70} = \frac{5}{14} = 5 : 14$

(ii) $11 \text{ cm} : 13 \text{ cm} = \frac{11}{13} = 11 : 13$

(iii) $42 : 36 = \frac{42}{36} = \frac{7}{6} = 7 : 6$

(iv) $\frac{3}{4} = 3 : 4$

- (3) (i) $3 : 7 = 6 : 14, 9 : 21, 12 : 28$
 (ii) $6 : 3 = 12 : 6, 18 : 9, 24 : 12$
 (iii) $8 : 9 = 16 : 18, 24 : 27, 32 : 36$

(iv) $3:6=6:12, 9:18, 12:24$

4. (i) $5:8$ or $4:5$

$$=5:8 = \frac{5}{8}, \quad 4:5 = \frac{4}{5}$$

L.C.M. of 8 and 5 = 40

$$\frac{5}{8} = \frac{5 \times 5}{8 \times 5} = \frac{25}{40}; \quad \frac{4}{5} = \frac{4 \times 8}{5 \times 8} = \frac{32}{40}$$

Since, $25 < 32$

$$\text{Hence } \frac{25}{40} < \frac{32}{40}$$

(ii) $9:11$ or $11:9$

$$=9:11 = \frac{9}{11}, \quad 11:9 = \frac{11}{9}$$

L.C.M of 11, a = 99

$$\frac{9}{11} = \frac{9 \times 9}{11 \times 9} = \frac{81}{99}, \quad \frac{11}{9} = \frac{11 \times 11}{9 \times 11} = \frac{121}{99} = 81 < 121$$

$$\text{Hence } \frac{81}{99} < \frac{121}{99}$$

(iii) $23:24$ or $15:16$

$$23:24 = \frac{23}{24}, \quad 15:16 = \frac{15}{16}$$

L.C.M of 24, 16 = 384

$$\frac{23}{24} = \frac{23 \times 16}{24 \times 16} = \frac{368}{384}, \quad \frac{15}{16} = \frac{15 \times 24}{16 \times 24} = \frac{360}{384}$$

Since, $368 > 360$

$$\text{Hence, } \frac{368}{384} > \frac{360}{384}$$

(iv) is similar as

(iii). So, do your self.

5. (i) $10:7$ or $15:22$

$$10:7 = \frac{10}{7}; \quad 15:22 = \frac{15}{22}$$

L.C.M of 7, 22 = 154

$$\frac{10}{7} = \frac{10 \times 22}{7 \times 22} = \frac{220}{154}; \quad \frac{15}{22} = \frac{15 \times 7}{22 \times 7} = \frac{105}{154}$$

Hence, $220 > 105$

$$\frac{220}{154} > \frac{105}{154}$$

(ii), (iii) and (iv) as similar as (i). so, do your self.

6. A car travels = 24 k min 3 hours

A train traves = 120 km in 2 hours

so, A car travels = $24 \div 3 = 8$ km in hours

$$\begin{aligned} \text{A train travel} &= \frac{120}{2} = 60 \text{ km in 1 hours} \\ &= \frac{8}{60} = \frac{2}{15} = 2 : 15 \end{aligned}$$

7. Anurag ran a distance = 15 km
his younger sister run = 500 m

$$\text{So, } = \frac{500}{1500} = \frac{1}{3} = 1 : 3$$

8. 10 : 1 (ii) 9 : 1

9. The office open = 9 am

The office closes = 5 pm

A lunch interval = 30 minutes

The Time between 9 am to 5 pm = 8 hours

8 hours = $8 \times 60 = 480$

$$\text{The rat of lunch interval to the total period of office} = \frac{30}{480} = \frac{1}{16} = 1 : 16$$

questions (10) to (17) do your self.

Exercise - 9.2

1. (i) Yes (ii) Yes (iii) Yes (iv) No (v) No (vi) yes
2. (i) Yes (ii) Yes (iii) No (iv) Yes (v) True (vi) True
3. (i) True (ii) False (iii) True (iv) True (v) True (vi) True
(viii) False (viii) False

4. (i) $18 : x :: 27 : 3$

$$\begin{aligned} &= \frac{18}{x} = \frac{27}{3} \\ &= \frac{18}{x} = \frac{9}{1} \end{aligned}$$

$$18 = 9x$$

$$x = \frac{18}{9}$$

$$x = 2$$

- (ii) $125 : x :: x : 5$

$$= \frac{125}{x} = \frac{x}{5}$$

$$x \times x = 125 \times 5$$

$$x^2 = 625$$

$$x = 625$$

$$x = 25$$

- (iii) $10 : 15 :: 12 : x$

$$\frac{10}{15} = \frac{12}{x}$$

$$10x = 180$$

$$x = \frac{180}{10} = 18$$

- (iv) $60 : x :: 52 : 39$

$$\frac{60}{x} = \frac{52}{39}$$

$$52x = 2340$$

$$x = \frac{2340}{52}$$

$$x = 45$$

- (v) $11 : 21 :: x : 231$

$$\frac{11}{21} = \frac{x}{231}$$

- (vi) $169 : x :: x : 1$

$$\frac{169}{x} = \frac{x}{1}$$

$$21x = 2541$$

$$x = \frac{2541}{21}$$

$$x = 21$$

5. (i) $121 : x :: x : 100$

$$\frac{121}{x} = \frac{x}{100}$$

$$x \times x = 121 \times 100$$

$$x^2 = 12100$$

$$x = 12100$$

$$x = 110$$

(iii) $4 : x :: 36$

$$\frac{4}{x} = \frac{x}{36}$$

$$x \times x = 4 \times 36$$

$$x^2 = 144$$

$$x = 144$$

$$x = 144$$

$$x = 12$$

(v) 36, 16

$$36 : x :: x : 16$$

$$\frac{36}{x} = \frac{x}{16}$$

$$x \times x = 36 \times 16$$

$$x = 576$$

$$x = 24$$

(vii) 4, 16

$$4 : x :: x : 16$$

$$\frac{4}{x} = \frac{x}{16}$$

$$x \times x = 4 \times 16$$

$$x = 64$$

$$x = 8$$

$$x \times x = 169$$

$$x^2 = 169$$

$$x = 13$$

(ii) $32 : x :: x : 50$

$$\frac{32}{x} = \frac{x}{50}$$

$$x \times x = 50 \times 32$$

$$x^2 = 1600$$

$$x = 1600$$

$$x = 40$$

(iv) 25, 36

$$25 : x :: x : 36$$

$$\frac{25}{x} = \frac{x}{36}$$

$$x \times x = 25 \times 36$$

$$x^2 = 900$$

$$x = 900$$

$$x = 30$$

(vi) 4, 9

$$4 : x :: x : 9$$

$$\frac{4}{x} = \frac{x}{9}$$

$$x \times x = 9 \times 4$$

$$x = 36$$

$$x = 6$$

(viii) 125, 5

$$125 : x :: x : 5$$

$$\frac{125}{x} = \frac{x}{5}$$

$$x \times x = 125 \times 5$$

$$x^2 = 625$$

$$x = 625$$

$$x = 25$$

6. (i) No (ii) Yes (iii) Yes (iv) No

7. $x:4::27:18$

$$\frac{x}{4} = \frac{27}{18}$$

$$x \times 18 = 4 \times 27$$

$$18x = 108$$

$$x = \frac{108}{18} = 6$$

8. $29:87::x:99$

$$\frac{29}{87} = \frac{x}{99}$$

$$87x = 29 \times 99$$

$$87x = 2871$$

$$x = \frac{2871}{87}$$

$$x = 33$$

9. 10

10. 3 (11) Anuj bought 72 kg wheat = ₹ 324
 If he could spend = ₹ 144
 Then he bought what = ₹ $324 \div 72$
 = ₹ 4.5
 ₹ 144 spent for = ₹ $144 \div 4.5$
 = 32 kg

(12) (13), (14), (15), (16), (17) as similar as (7) to (11) So, do your self

18. (i) 12 (ii) 35 (iii) 36 (iv) 69 (v) 6 (vi) 5

Exercise - 9.3

2. The cost of 7m cloth = ₹ 294

$$\text{cost of 1 m cloth} = \frac{294}{7} = 42$$

$$\begin{aligned} \text{cost of 5 m cloth} &= 5 \times 42 \\ &= ₹ 210 \end{aligned}$$

3. cost of 12 dozen bananas is = ₹ 216

$$\text{cost of 1 dozen bananas is} = \frac{216}{12} = 18$$

$$\begin{aligned} \text{cost of 11 dozen bananas is} &= 11 \times 18 \\ &= ₹ 198 \end{aligned}$$

4. A man earns money in 20 days = 500

$$\text{A man earns money in One days} = \frac{500}{20} = 25$$

$$\begin{aligned} \text{So A man earns money in 30 days} &= 25 \times 30 \\ &= ₹ 750 \end{aligned}$$

5. The price of 50 kg wheat = ₹ 150

$$\text{The price of Oneke wheat} = \frac{150}{50} \times 3$$

$$\begin{aligned}\text{So the price of 35 nkg wheat} &= 3 \times 35 \\ &= ₹105\end{aligned}$$

7. 17 brick wheat = 102 kg

$$1 \text{ brick wheat} = \frac{102}{17} \times 6$$

$$\begin{aligned}\text{so, 28 brick wheat} &= 6 \times 28 \\ &= ₹168\end{aligned}$$

8. Cost of 4 dozen = ₹ 60

$$\text{cos of 1 dozen} = \frac{60}{4} \times 15$$

$$\text{the cost of one banana} = \frac{15}{12} \Rightarrow 1.25$$

$$\begin{aligned}\text{so the cost of 12.50 dozen} &= \frac{12.50}{1.25} \times 10 \\ &= ₹ 10\end{aligned}$$

9. The cost of 15 tin countence oil = ₹4800

A sealed tin contener contains oil = 5l

$$\text{The cost of one tin oil} = \frac{4800}{15}$$

$$= 320$$

So, the cost of 5l oil = ₹ 320

$$\text{The cost of 1l oil} = \frac{320}{5}$$

$$= ₹64$$

The cost of 150 l oil = ₹ 64 × 150 l

$$= ₹ 9600$$

Objective type questions

1. iv (2) iii (3) iii (4) ii (5) i (6) i
(7) ii (8) (iii) (9) ii (10) i

Fill in the blanks

- (1) Ratio (2) Proportion (3) Four (4) Extremes
(5) second, third (6) extremes

True / False

- (1) True (2) True (3) False (4) True (5) True

Chapter Assessment

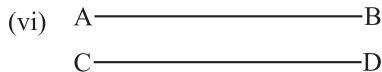
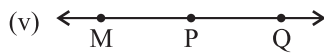
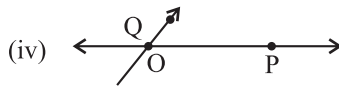
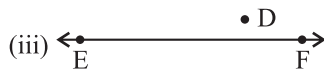
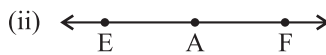
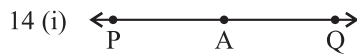
1. (i) 1 : 10 (ii) 3 : 16 (iii) 5 : 3 (iv) 6 : 5 (v) 14 : 3 (vi) 16 : 1
2. (i) 4 : 8 (ii) 5 : 11
3. (i) 5 : 6 (ii) 7 : 3 (iii) 1 : 2 (iv) 2 : 5
4. (i) 1 : 5 < 3 : 17 (ii) 5 : 13 < 2 : 5 (iii) 2 : 15 < 4 : 7
(iv) 11 : 9 < 3 : 5
5. (ii) and (iv)
6 (i) 1 (ii) 50 (iii) 10 (iv) 6

7. No, $2 \times 10 = 3 \times 9$ 8. (i) 18 (ii) 144
 9. 100, 150, 250 10. 9 : 10
 11. (i) 5 : 4 (ii) 4 : 1 (iii) 1 : 5 (12) 675
 13. 75 quintals, 90 quintals 14. 54 km/houl
 15. ₹ 8490 16. $3 : 5 :: 54 : 90$, $5 : 3 :: 90 : 54$, $3 : 54 :: 5 : 90$ and $54 : 3 : 90 : 5$
 17. (i) 8 hours (ii) $375 \frac{1}{2}$ km
 18. (i) 11 : 10 (ii) 8 : 11 19. 450 (2) 10

Chapter - 10 Basic Geometrical Concepts

Exercise - 10.1

1. (i) Point (ii) plane (iii) end point (iv) same point (v) Collinear
 2. points – C, D, E, F, G, H; Line segments C, D DE, EF, FG, GH, HC DG; Planes– CDGH; Plane – DEFG
 3. (i) 6 (ii) 7 (iii) 12
 4. Ten finite 5. Exactly One
 6. AB, BA, BC, CB, CD, DC, AC, CA, BD, DB, AD, DA
 7. (i) True (ii) True (iii) False (iv) True (v) True
 (vi) False (vii) True
 8. There are five distinct lines i.e. l, m, n, p, q (i) 10 points i.e. A, B, C, D, E, F, G, H, I and J (ii) l, m; d, p; m, n; m, g, n, g; l, n; l, g; m, p; n, p; p, q; (iii) A, J, C (iv) A, I, G, F (v) A, I, H (vi) l, m, n (vii) No
 9. (i) l, m; l, n; M, n; (ii) l, m (iii) l, n (iv) l, m (v) l, m (vi) l, m
 10. (i) n, m, r (ii) (A, F, B); (A, E, C); (A, G, D); (B, DC); (C, G, F); (B, G, E)
 (iii) P, q, r (iv) C (v) A, B, C, D, E, F, G (iv) P, n; (l, r)
 11. (i) line (ii) line segment (iii) line (iv) point
 (v) line segment (vi) line segment (vii) ray
 (viii) plane (ix) point
 12. PQ, QP 13. Yes



Exercise - 10.2

1. Closed curve – (i), (ii), (v), (vii), (viii) open curve – (iii), (iv), (vi), (ix), (x)
 2. Do your self (3) Do your self
 4. (i) A, D, H (ii) C, F, J (iii) B, E, G, I 5. No
 6. (i) AB, BC (ii) AB, CD (iii) A, B (iv) A, C (v) AC, BD
 (vi) S, Q (vii) R, T
 7. (i) No, it is a polygon
 (ii) Yes, it has 12 vertices

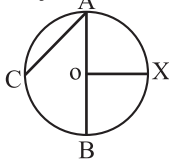
8. (i) Yes, because it is formed by line segments
(ii) Yes, It is a closed curve because the curve begin and at the same.

Exercise - 10.3

- $\angle A$ or $\angle DAB$; $\angle B$ or $\angle ABC$; $\angle C$ or $\angle BCD$; $\angle D$ or $\angle C$
- (i) Points, B, C, Y (ii) Points L, M, N, Y, B, C (iii) Points P, A,
- (i) Yes (ii) No (iii) Yes (iv) Yes (v) Points Q
- (i) $\angle ROQ$ (ii) $\angle POQ$ (iii) $\angle RCP$ (iv) $\angle OAR$ (v) $\angle OBP$
(vi) $\angle QRO$ 5. Do your self
- $\triangle ABC$, $\triangle DEF$, $\triangle ADE$, $\triangle DBF$, $\triangle DEF$
- (i) $\triangle ABC$, $\triangle ABF$ (ii) $\triangle BDF$, $\triangle BDC$ (iii) $\triangle EAC$, $\triangle QEDF$
(iv) $\triangle ADF$, $\triangle FBC$ (v) $\triangle BCA$ \angle $\triangle BCD$ (vi) $\triangle AEC$, $\triangle AED$
- (8) (i) $\angle C$ (ii) AB (iii) AC (iv) A

Exercise 10.4

- No, because the line segments are inter secting each other
- (i) Yes (ii) No 3.(i) PQRS (ii) PQ, QR and RS, PS
(iii) PQ, SR and QR, PS (iv) QS (v) $\angle P$ and $\angle R$
- quadrilateral DECD, quadrilateral DFCA, quadrilateral EFBA, quadrilateral ADFE,
quadrilateral DEFB, quadrilateral DECF
- (i) 0 (ii) \overline{OA} , \overline{OB} , \overline{OC} (iii) \overline{AC} (iv) \overline{ED} (v) O, P
(vi) Q (vii) AOB (shaded portion) (viii) segment ED (shaded portion)
- (i) Radius (ii) Diameter (iii) chord (iv) Arc (v) centre
- (i) O (ii) \overline{OA} (iii) \overline{BA} (iv) \overline{AB} (v) O, P, Q
(vi) L, T, C (vii) \overline{ODA} (viii) \overline{AD} (ix) B, M, A, D
- Major Arc = \overline{ADB} , Minor arc = \overline{ACB} , OAB is sector



Objective type questions:

- (1) i (2) ii (3) iv (4) iii (5) i
(6) ii (7) i (8) iv (9) iii (10) ii

Fill in the blanks

- (1) Positions (2) intersect, parallel (3) straight (4) line
(5) three, three, three (6) collinear (7) diameter (8) two
(9) semi-circle (10) concentric

True/false

- (1) True (2) True (3) False (4) True (5) False
(6) True (7) False (8) True (9) True (10) False

Match the following

- (1) d (2) f (3) a (4) b (5) e (6) g
(7) h (8) c

Chapter Assessment

1. (i) P, Q, R, S (ii) AB, BC, DA, PQ
 (iii) AQ, DP, AB, BA, BS (iv) (AD, BC); (AB, DC)
2. (i) lm, (ii) (P,r) (q,l) (r,l) (p,m) (r,n) (q,i) and (q,m) (iii) (r,m) (iv) (p,r)
4. 7 planes 4. three 5. (i) Yes (ii) Yes (iii) Yes
- 6.
7. (i) Vertex – A, Arms – AC, AB (ii) Vertex – P, Arms – PQ, PR
 (iii) Vertex – U, Arms – UV, UW
8. (i) T (ii) T (iii) F (iv) T (v) F
9. (i) $\triangle ABC, \triangle ABD, \triangle ADC$
 (ii) $\angle ABD, \angle ACD, \angle BAC, \angle BAD, \angle CAD, \angle ADB, \angle ADC$
 (iii) $\overline{AB}, \overline{AC}, \overline{BC}, \overline{AD}, \overline{BD}, \overline{DC}$ (iv) $\triangle ABC, \triangle ABD$
10. (i) PS, PQ, QS, ST, QT, QR, TS, TU, RU, PR and SU.
 (ii) $\angle SPQ, \angle PQS, \angle QSP, \angle QST, \angle STQ, \angle TQS, \angle QTR, \angle TRQ, \angle CTQ, \angle RTU, \angle TUR, \angle URT, \angle PST, \angle QRU, \angle PQT, \angle SQR, \angle STR, \angle QTU$
11. (i) $\triangle ADM, \triangle AME, \triangle ABM, \triangle AMC, \triangle BMD, \triangle BEA, \triangle CME, \triangle BMC, \triangle ABC, \triangle EBC, \triangle ADC, \triangle DBC$
 (ii) Do your self.
 (iii) $\triangle BMD, \triangle BMA, \triangle BAE$
12. (i) $\angle SPR$ and $\angle RPQ, \angle SRP$ and $\angle PRQ$ (ii) $\angle ABD, \angle DBC, \angle ADB, \angle BDC$
13. (i) Quadrilateral, AC and BD (ii) Yes (iii) F, H
14. (i) A, B, C, D (ii) AB, BC, CD, DA
 (iii) $\angle ABO, \angle OBC, \angle BCD, \angle BCO, \angle OCD, \angle BAD, \angle BAO, \angle CDA, \angle BDA, \angle AOB, \angle BOC, \angle COD, \angle OOA$
 (iv) $\triangle AOD, \triangle DOC, \triangle DCO, \triangle BOA, \triangle ABC, \triangle ADB, \triangle ADC, \triangle BDC$ (v) CD
 (vi) AB and DC (vii) BD (viii) A, B, C, D (ix) $\angle A$ and $\angle C$,
15. (i) O (ii) $\overline{OA}, \overline{OQ}$ (iii) \overline{AB} (iv) \overline{PQ} (v) AOQ
 (vi) \overline{PXQ} (vii) T (viii) Y (ix) \overline{PXQ}
16. Yes (ii) No

Chapter = 11 Understanding Elementary Shapes

Exercise - 11.1

1. 14; $\overline{AB}, \overline{BC}, \overline{CD}, \overline{DH}, \overline{FH}, \overline{HA}, \overline{AF}, \overline{BD}, \overline{HG}, \overline{CE}, \overline{AG}, \overline{GF}, \overline{BE}, \overline{ED}$ 2. Do your self
3. (i) = (ii) < (iii) = (iv) >
4. yes, because clies between A and B
5. (i) Long est BC, Shortest AD (ii) Longest PR, Shortest QS,
6. Do your self
7. (i) $2\text{ CD} = 2 \times 2.3 = 4.6$
 (ii) $3\text{ AB} = 3 \times 4.5 = 13.5$
 (iii) $\text{AB} - \text{CD} = 4.5 - 2.3 = 2.2$
 (iv) $\text{AB} + 2\text{ CD}$

$$\begin{aligned}
&= 4.5 + 2 \times 2.3 && = 4.5 + 4.6 \\
&= 9.1 \\
&= 4.5 + 2 \times 2.3 \\
&= 4.5 + 4.6 \\
&= 9.1
\end{aligned}$$

(8), (9), (10), (11), (12) Do your self

Exercise - 11.2

1. (i) Obtuse (ii) Straight (iii) a cute (iv) reflex (v) right angle
2. Do your self
3. (i) A cute (ii) Obtuse (iii) Reflex (iv) Obtuse (v) A cute
(vi) Reflex (vii) Reflex (viii) Obtuse
4. (i) 3 right angles
 $\therefore 1 \text{ right angle} = 90^\circ$
 $\therefore 3 \text{ right angle} = 90^\circ \times 3 = 270^\circ$
- (ii) 1 complete angle = 360°
- (iii) $\frac{1}{4}$ straight angle
 $\therefore 1 \text{ straight angle} = \frac{1}{2} \times 360 = 180$
 So, $\frac{1}{4}$ straight angle = $\frac{1}{4} \times 180 = 45^\circ$
- (iv) $\frac{4}{3}$ right angle
 $\therefore 1 \text{ right angle} = 90^\circ$
 so $\frac{4}{3}$ right angle = $\frac{4}{3} \times 90^\circ$
 $= 120^\circ$
- (v) 1 revolution = 360°
- (vi) $\frac{3}{4}$ revolution = $\frac{3}{4} \times 360^\circ$
 $= 270^\circ$
5. (i) 12 (ii) 10 (iii) 9
6. (i) 10° (ii) 90° (iii) 180° (iii) 90°
7. (i) 45° (ii) 40°
8. (i) 60° (ii) 100°
9. (i) straight (ii) Straight (iii) right angle (iv) right angle (v) acute angle (vi) obtuse angle (vii) acute angle (viii) Obtuse angle
10. (i) 3 to 9 = $\frac{1}{2}$ (ii) 4 to 7 = $\frac{1}{4}$ (iii) 7 to 10 = $\frac{1}{4}$
 (iv) 12 to 9 = $\frac{3}{4}$ (v) 1 to 10 = $\frac{3}{4}$ (vi) 6 to 3 = $\frac{3}{4}$
11. (i) 9 (ii) 2 (iii) 7 (iv) 7
12. Do your self 13. Do your self

Exercise 11.3

1. (i) acute (ii) acute (iii) obtuse (iv) right

- (v) acute (vi) Obtuse
2. (i) Isosceles triangles (ii) Equilateral triangle (iii) Scalene triangle
3. (i) Isosceles and acute angle triangle
(ii) Scalene and right angle triangle
(iii) Isosceles and obtuse angled triangle
(v) equilateral and acute
(vi) Scalene and obtuse angled triangle
4. (i) Yes (ii) No (iii) No (iv) Yes (v) No (vi) Yes
(vii) No (viii) Yes
5. (i), (ii), (v) and (vi) can not be measure of sides of a triangle.
6. $30^\circ, 60^\circ, 90^\circ$ 7. $\angle C = 60^\circ \angle B = 30^\circ \angle A = 90^\circ$
8. (i) A triangle = 180°
two angles are = 39° and $49^\circ = 88^\circ$
third angle = $180^\circ - 88^\circ = 92^\circ$
(ii) A triangle = 180°
two angles = 88° and $55^\circ = 143$
third angle = $180^\circ - 143^\circ = 37^\circ$
(iii) and (iv) as similar as (i) and (ii). So, do your self

Exercise 11.4

1. (i) Rectangle (ii) Parallelogram (iii) Trapezium (iv) Rhombus
(v) Parallelogram (vi) Rhombus (vii) Isosceles trapezium (viii) Square
2. (i) Parallelogram AQCB and Parallelogram DEFG (ii) DEFG
(iii) trapezium DPRG
3. Kite (i) Yes (ii) Yes (iii) Yes (iv) Yes
4. (i) all, all (ii) Opposite, all (iii) two (iv) right angle (v) Opposite
5. (i) Opposite sides are equal and each angle is a right angle
(ii) All the four sides are equal and diagonals bisect each other at right angles
(iii) opposite sides or parallel
(iv) opposite sides are parallel
6. (i) True (ii) True (iii) True (iv) True (v) False

Exercise - 11.5

1. Do your self
2. Figure (i) and (ii) are regular polygons because all the sides are of equal length
3. (i) regular (ii) pentagon (iii) 92 (iv) six (v) quadrilateral

Exercise - 11.6

1. (i) Cuboid (ii) Cuboid (iii) Cuboid (iv) Cylinder (v) sphere (vi) Cone
2. (i) and (v) are polygons (ii), (iii) and (iv) are solids
3. one curved and two plane faces (ii) One curved and one plane faces (iii) one curved face
4. (i) Sphere (ii) Cylinder (iii) Square pyramid

Objective type questions

1. (iv) 2 (ii) 3 (ii) 4 (i) 5 (iv) 6 (iii)
7. (iv) 8. (iii) 9. (ii) 10 (iii).

Fill in the blanks

1. Unequal 2. hypotenuse 3. parallel. equal. 4. kite

5. three 6. opposite 7. triangular 8. Magnitude.

True/false

1. True. 2. False 3. True 4. True 5. False 6. True.

Match the following

1. (c) 2. (g) 3. (i) 4. (a) 5. (i) 6. (d)
7. (b) 8. (h) 9. (e) 10. (f)

Chapter Assessment

1. (i) 4.2 cm (ii) 2.8cm
4. (i) (a) obtuse (b) acute (c) Obtuse (d) acute (ii) (a) obtuse (b) right (c) right (d) obtuse (e) acute
5. (i) west (ii) north (iii) east
6. (i) 6 (ii) 8 (iii) 8
7. (i) supplementary (ii) complementary (iii) Supplementary (iv) complementary
8. (i) Acute angle (ii) Right angles (iii) Acute angle (iv) straight angle (v) obtuse angle (vi) Acute angle
9. (i) Acute Angled and isosceles (ii) Right angled and scalene (iii) obtuse angled and isosceles (iv) Right angled and isosceles (v) Equilateral and Acute angled (vi) Obtuse angled and scalene.
10. $30^\circ, 60^\circ, 90^\circ$ (ii) $\angle A = 40^\circ, \angle B = 80^\circ, \angle C = 60^\circ$
12. (iii) and (iv) are correct 13. square
14. (i) Quadrilateral (ii) Triangle (iii) Pentagon (iv) Octagon.
15. (i) dice (ii) Paperweight (iii) Chalk (iv) Marble

Chapter 12 Symmetry

Exercise - 12.1

1. Do your self
2. (i), (iii) and (iv) are symmetrical figures
3. (ii), (iii), (iv) and (v) (4) (i) 1 (ii) 1z (5) Do your self

Exercise 12.2

Do your self

Objective type questions

- (1) (iii) (2) iii (3) iv (4) i (5) iii (6) iii (7) i (8) iv

Fill in the blanks

- (1) four (2) circle (3) scalene (4) two (5) no (6) symmetry

Match the following

- (1) d (2) a (3) f (4) b (5) c (6) e

Chapter Assessment

Do your self

Chapter - 13 Practical Geometry

Do your self

Chapter - 14 Mensuration

Exercise 14.1

1. (i) Perimeter = $AB + BC + CD + DE + EF + FA$
 $= 2 \text{ cm} + 4 \text{ cm} + 6 \text{ cm} + 3 \text{ cm} + 2 \text{ cm}$
 $= 17 \text{ cm}$
(ii) Perimeter = $AB + BC + CD + DE$

$$= 4 \text{ cm} + 3 \text{ cm} + 1 \text{ cm} + 2 \text{ cm} = 10 \text{ cm}$$

(iii), (iv) and (v) as similar as (i) and (ii). So, do your self

2. (i) Perimeter = 38 cm
missing length = $38 \text{ cm} - (9 + 10 + 8)$
= $38 \text{ cm} - 27 \text{ cm}$
= 11 cm
- (ii) Perimeter = 19 cm
missing length = $19 \text{ cm} - (2 + 5 + 2 + 5)$
= $19 \text{ cm} - 14 \text{ cm} = 5 \text{ cm}$
3. (i) Perimeter of rectangle = Sum of all sides
= $12 \text{ cm} + 9.3 \text{ cm} + 12 \text{ cm} + 9.3 \text{ cm}$
= 42.6 cm
- (ii) Perimeter of square = $AB + BC + CD + AD$
= $10 \text{ cm} + 10 \text{ cm} + 10 \text{ cm} + 10 \text{ cm}$
= 40 cm
- (iii) Perimeter of rectangle = $AB + BC + CD + AD$
= $11 \text{ cm} + 23 \text{ cm} + 11 \text{ cm} + 23 \text{ cm}$
= 68 cm
4. (i) A perimeter of triangle $3 \text{ cm} + 4 \text{ cm} + 5 \text{ cm}$
= 12 cm
- (ii) Perimeter of triangle = $9 \text{ cm} + 9 \text{ cm} + 9 \text{ cm}$
= 27 cm
5. The perimeter of square = 20 cm
The sides of square = $20 \text{ cm} \div 4$
= 5 cm

Exercise - 14.2

1. (i) Area of rect angle = length \times breadth
= $4 \text{ cm} \times 5 \text{ cm}$
= 20 cm^2
- (ii) Area of rectangle = length \times breadth
= $13 \text{ m} \times 21 \text{ m}$
= 273 m^2
- (iii) and (iv) similar as (i) and (ii).
2. (i) The area of squares = side \times 4
= $9 \text{ cm} \times 4$
= 36 cm
- (ii) The area of squares = side \times 4
= $12 \text{ cm} \times 4$
= 48 cm
- (iii) The area of squares = side \times 4
= $15 \text{ m} \times 4$
= 60 m
3. 4 cm 4. 2.5 m² 5. 7.5 m 6. 15 envelopes

Objective type questions

- (1) ii (2) i (3) ii (4) iv (5) iii (6) iv (7) iii

- (8) i (9) i 10 ii

Fill in the blanks

1. area 2. 100 3. 10000 4. area 5. length + breadth

True / False

- (1) True (2) False (3) True (4) True (5) True (6) False

Chapter Assessment

1. (i) 10 cm^2 (ii) 8 cm^2 (iii) 8 cm^2 (iv) 10 cm^2 (v) 12 cm^2
 2. (i) 18 cm^2 (ii) 26 cm^2
 3. (i) 52 cm (ii) 23 cm (iii), 22 cm
 4. (i) 40 cm^2 (ii) 245 cm^2 (iii) 9 cm^2
 5. ₹1755 6. 450
 7. Area of rectangle = 1500
 cm^2 Area of square = 1600 cm^2
 8. 9 times the area of given square
 9. 15 m^2 10. 2 cm 11. 18 cm 12. 19 m

Chapter 15 Data Handling

Exercise - 15.1

1.	Blood of group	Tally marks	Frequency
	A	≠ III	8
	B	≠ II	7
	O	≠ I	6
	AB	III	4

2.	Number of family Members	Tally marks	Frequency
	2	I	1
	3	I	1
	5	III	4
	6	≠ I	6
	7	≠	5
	8	III	3

- (i) The smallest family size of 2 members
 (ii) The one family is of the smallest size
 (iii) The most common family size is of 6 members

3.

No. of hours	Tally Marks	Frequency
4	III	3
5	III	3
6	≠ III	8
7	≠ ≠	10
8	II	2
9	I	1
10	I	1

- (i) 10 hours (ii) 4 studentns (iii) 4 hours

4.

Weight	Tally Marks	Frequency
39		4
40		4
41	≠	5
42	≠	7
43	≠	5
44		3
45		1
46		1

- (i) 46 kg (ii) 39kg (iii) 8 students
 (iv) 2 students (v) 7 student

5.

Score	Tally Marks	Frequency
15		4
16	≠	6
18	≠	6
20	≠	6
24	≠	5
25	≠	5
27		3
28		3
29		1
30		1

6.

Sweet	Tally Marks	Frequency
Ladoo	≠ ≠	11
Barfi		3
Jalebi	≠	7
Rasgullas	≠	9

(ii) Ladoo

Exercise - 15-2

- (i) Class Viii, 6, girls (ii) No (iii) 12 girls (iv) Class, 1
- (i) 12 bulbs, (ii) 26 bulbs (iii) Wednesday, Saturday
 (iv) 101 bulbs
- (i) Martin (ii) 700 baskets (iii) Anwar, Martin and Ranjit Singh
 (iv) Rahim

4.

Village	Number of animals (Scale ☒ = 10 animals)
A	☒☒☒☒☒☒☒☒
B	☒☒☒☒☒☒☒☒☒☒☒☒
C	☒☒☒☒☒☒☒☒
D	☒☒☒☒
E	☒☒☒☒☒☒

- (i) 6 symbols (ii) Village B (iii) village C

5.

Year	Number of Students (Scale ☺ = 100 students)
2004	☺ ☺ ☺ ☺
2006	☺ ☺ ☺ ☺ ☺ ☺
2008	☺ ☺ ☺ ☺ ☺
2010	☺ ☺ ☺ ☺ ☺ ☺
2012	☺ ☺ ☺ ☺ ☺ ☺ ☺

- (i) 2004, 400 students (ii) 2012, 650 students
 (iii) 450 students (iv) 250 students
6. (i) 5300 (ii) Saturday 1250
 (iii) Monday, 550 (iv) Saturday

Exercise 15.3

Do your self

Exercise 15.4

1. (i) This graph shows the marks obtained by Anuj's in different subjects
 (ii) Hindi (iii) Social Studies (iv) Hindi = 80
2. (i) LPG, 35 Houses (ii) 10 houses (iii) 5000 houses
3. (i) 1250 (ii) 4, 5, 6, 7, 8 (iii) 50 (iv) Size 5
 (v) Size 7 (vi) False
4. (i) N. H. 10 (ii) N. H. 2 (iii) 1000 km
 (iv) N. H. 3 (v) 600 km 5. Do your self

Fill in the blanks

1. Data (2) tally (3) observation
 (4) Tabular 5. pictograph (6) width

True/False

1. False (2) False (3) True
 4. False (5) True








Chapter Assessment

1. (i) 37, 39, 44, 48, 48, 59, 52, 53, 55, 56, 58, 58, 59, 60, 60, 60, 61, 62, 64, 67, 68, 70, 75, 77, 78, 84, 88, 90, 90, 100
 (ii) 100 (iii) 37 (iv) 2 students (v) 5 students

2.

Accident	Tally Marks	Frequency
0		2
1		3
2	≡	6
3		3
4		4
5	≡	6
6	≡	6

3.

Year	Number of houses (Scale  1 = 500 houses)
2002	
2003	
2004	
2005	
2006	
2007	

4. (i) 900 (ii) more than 150 and less than 300 (iii) English (iv) math
5. Do your self
6. (i) The bar graph shows the heights (in metre) of six mountain peaks.
 (ii) Mount everest, 8800 metres
 (iii) $6400\text{ m} < 7000\text{ m} < 8000\text{ m} < 8100\text{ m} < 8600\text{ m} < 8800\text{ m}$
 (iv) 8 : 11
 (v) False