MY FIRST MATHEMATICS 6 TO 8

EXERCISE–1.1

1. (a) Thirteen lakh forty-five thousand six hundred nine
   (b) Nine crore ninety-nine lakh ninety-nine thousand nine hundred ninety-five
   (c) Fifty-seven lakh six thousand eight hundred ninety-five
2. (a) Five hundred seventy-eight thousand three hundred forty-six
   (b) Seven million nine hundred fifty-two thousand three hundred forty-six
   (c) Two millon three hundred thirty-five thousand six-hundred seventy-eighty.
3. (a) 8000000 + 400000 + 50000 + 3000 + 700 + 60 + 5
   (b) 50000000 + 7000000 + 60000 + 2000 + 300 + 10 + 9
   (c) 40000000 + 10000 + 800 + 9
4. 1
5. 92,354; 98,432; 3,21,157; 3,84,651; 4,27,554
6. 90,05,20,184; 9,50,09,481; 9,48,10,095; 9,40,09,651; 9,05,04,518
7. (a) 6845 > 3846
   (b) 6,84,312 = 6,84,312
   (c) 9,87,653 < 98,73,521
   (d) 10,89,642 < 10,93,461
   (e) 99,999 > 10,000
   (f) 2,45,017 = 245017
8. (a) Nineteen lakh forty thousand three hundred eight
   (b) Three lakh thirty-five thousand seven
   (c) One crore seventy lakh one thousand three
   (d) Five arab seventy-three lakh forty-five thousand twelve
9. (a) Seven million four hundred five thousand three hundred sixteen
   (b) Four hundred thirty-five thousand two
   (c) One billion five hundred nine million four hundred sixty-three thousand one hundred twelve
   (d) Three hundred ninety-seven million fifty-one thousand eight
10. 198
11. 7,99,2000;
12. 15,000,000
13. (a) (i) 7,60,543 : Seven lakh sixty thousand five hundred forty-three
    (ii) 6,75,034 : Six lakh seventy-five thousand thirty-four
    (iii) 5,76,430 : Five lakh seventy-six thousand four hundred thirty
    (iv) 3,74,056 : Three lakh seventy-four thousand fifty-six
    (v) 4,57,360 : Four lakh fifty-seven thousand three hundred sixty.

(b) (i) Ascending order : 374056; 457360; 576430; 675034; 760543

(ii) Descending order : 760543; 675034; 576430; 457360; 374056

14. (a) G – 9875430
S – 3045789

(b) G – 8643210
S – 1023468

(c) G – 965320
S – 203569

(d) G – 97531
S – 13579

(e) G – 86420
S – 20468

(f) G – 973100
S – 100379

EXERCISE–1.2

1. (a) 67 + 99 = 166 = 170
(b) 364 – 273 = 191 = 190
(c) 1794 – 1237 = 557 = 560
(d) 97 × 12 = 1164 = 1160
(e) 232 × 65 = 152424
= 152420
(f) 176 × 199 = 25024
= 25020
(g) 252 + 749 = 1001 = 1000
(h) 378 – 194 = 184 = 180
(i) 28 ÷ 14 = 2 = 0
(j) 89 – 28 = 61 = 60
(k) 637 ÷ 78 = 8.8 = 8
(l) 479 – 363 = 116 = 120
(m) 993 ÷ 29 = 304 = 300
(n) 1298 – 723 = 575 = 570
(o) 278 ÷ 43 = 70

2. (a) 3580 + 4295 = 7875
= 7900
(b) 270 + 395 = 665 = 700
(c) 867 + 439 = 1306 = 1300
(d) 273 + 1999 = 2272 = 2300
(e) 8940 + 198 = 9138
= 9100

3. (a) 25873 – 20677 = 5196
= 5000
(b) 5613 – 3075 = 2538
= 3000
(c) 35846 – 23910 = 11936
= 12000
(d) 5739 – 2651 = 3078
= 3000
(e) 8479 – 5343 = 2836
= 3000

4. (a) 792 × 265 = 209890
= 209900
(b) 476 × 134 = 63784
= 63800
(c) 261 × 173 = 45153 = 45200
(d) 896 × 247 = 221312
= 221300

5. (a) $9\overline{)29}$ → 3, 27, 2

(b) $48\overline{)478}$ → 9, 432, 46

(c) $8\overline{)655}$ → 81, 64, 15, 8, 7

(d) $219\overline{)1678}$ → 7, 1533, 145

(e) $37\overline{)2845}$ → 76, 259, 26

(f)
$$\begin{array}{r} 31 \\ 63\overline{)1989} \\ 189 \\ \hline 99 \\ 63 \\ \hline 36 \end{array}$$

6. $98 - 19 = 79 = 80$

7. $\frac{425}{17} = 25$

EXERCISE–1.3

1. (a) LVI (b) XXIX
   (c) LXXVIII (d) CDXCV
   (e) CCCLXXV
   (f) DXLIX (g) CLXXIV
   (h) CCXCIX (i) DCI
   (j) DCCCXXXV
2. (a) 34 (b) 58
   (c) 45 (d) 234
   (e) 283 (f) 439
   (g) 242 (h) 167
3. (a) XXI, XXIV, XXXI, XL, XLV
   (b) CDXLV, DXXIX, DXLIV, DXCIX (c) LVIII, XLLX, XXXVIII, XXXII (d) DCXXXV, CDXXIX, CCCLIV, CXLI

MCQs

Tick (✓) the correct option in each of the following :

1. (d) 2. (a) 3. (a) 4. (c) 5. (a) 6. (b)
7. (c) 8. (c) 9. (b) 10. (c) 11. (a)
12. (a) 13. (c) 14. (c) 15. (b)

EXERCISE–2.1

1. (a) $715 + 250 + 335 = 300$
   (b) $82 + 106 + 244 + 121 = 1300$
   (c) $488 + 761 + 512 + = 2000$
   (d) $222 + 333 + 667 + 778 = 2000$
2. (a) $70{,}546 - 56{,}24 = 13{,}622$
   (b) $81{,}329 - 76{,}408 = 4921$
   (c) $10{,}356 - 689 = 6667$
   (d) $23{,}605 - 19{,}878 = 3727$
   (e) $10{,}000 - 8397 = 1603$
3. (a)
$$\begin{array}{r} 2375 \\ +5569 \\ \hline 7944 \end{array}$$
(b)
$$\begin{array}{r} 7747 \\ +1869 \\ \hline 9616 \end{array}$$
(c)
$$\begin{array}{r} 5552 \\ +2468 \\ \hline 8020 \end{array}$$
(d)
$$\begin{array}{r} 7659 \\ -1828 \\ \hline 5831 \end{array}$$
(e)
$$\begin{array}{r} 8982 \\ -2665 \\ \hline 6317 \end{array}$$
(f)
$$\begin{array}{r} 7223 \\ -5718 \\ \hline 1505 \end{array}$$

4.
$$\begin{array}{r} 1256 \\ -\ 696 \\ \hline 560 \end{array}$$

5.
$$\begin{array}{r} 1286 \\ +1198 \\ \hline 2484 \end{array}$$
$$\begin{array}{r} 4526 \\ -2426 \\ \hline 2100 \end{array}$$

6.
$$\begin{array}{r} 2517 \\ +1815 \\ \hline 4332 \end{array}$$
$$\begin{array}{r} 6000 \\ -4332 \\ \hline 1668 \end{array}$$

7.
$$\begin{array}{r} 28436 \\ -26438 \\ \hline 1998 \end{array}$$

8.
$$\begin{array}{r} 2568 \\ +5897 \\ +8640 \\ \hline 16805 \end{array}$$
$$\begin{array}{r} 100000 \\ -16805 \\ \hline 83195 \end{array}$$

9.
$$\begin{array}{r} 1\,0\,0\,0\,0\,0 \\ +\,9\,9\,9\,9\,9\,9 \\ \hline 1\,0\,9\,9\,9\,9\,9 \end{array}$$

10. (a) 12,5,8,13,6 (b) 1,14,8,5,6,9,2

EXERCISE–2.2

1. (a) $818 \times 100 = 81800$
   (b) $621 \times 1000 = 621000$
   (c) $327 \times 1000 = 327000$
   (d) $1234 \times 100 = 123400$
   (e) $212 \times 8 \times 500$
   $= 1696 \times 500 = 84800$
2. (a) $6389 \times (9 + 1) = 6389 \times 10$
   $= 63890$
   (b) $717 \times (8 + 2) = 717 \times 10$
   $= 7170$
   (c) $595 \times (96 + 4) = 595 \times 100$
   $= 59500$
   (d) $1832 \times (99 + 1)$
   $= 1832 \times 100$
   $= 183200$
   (e) $6843 \times (8 + 2) = 6843 + 10$
   $= 68430$
3. (a)
$$\begin{array}{r} 1\,0\,0\,0\,0 \\ \times\,9\,9 \\ \hline 9\,0\,0\,0\,0 \\ 9\,0\,0\,0\,0\,0 \\ \hline 9\,9\,0\,0\,0\,0 \end{array}$$

   (b)
$$\begin{array}{r} 1\,0\,0\,0\,0\,0 \\ \times\,1\,0\,0 \\ \hline 0\,0\,0\,0\,0\,0 \\ 0\,0\,0\,0\,0\,0 \\ 1\,0\,0\,0\,0\,0\,0 \\ \hline 1\,0\,0\,0\,0\,0\,0\,0 \end{array}$$

4. (a) $(859 \times 2) + (859 \times 100)$
   $= 1718 + 85900$
   $= 87618$
   (b) $(673 \times 10) + (673 \times 100)$
   $= 6730 + 67300$
   $= 74030$
   (c) $(46 \times 6) + (46 \times 500)$
   $= 276 + 23000$
   $= 23270$
   (d) $(112 \times 4) + (112 \times 1000)$
   $= 448 + 112000$
   $= 112448$
   (e) $(778 \times 1) + (778 \times 10000)$
   $= 778 + 7780000$
   $= 7780778$
5. Dividend = (Divisor × quotient + Remainder)
   $= (59 \times 212) + 32$
   $= 2968 + 32 = 30000$
6. Dividend = (Divisor × quotient + Remainder)
   $= (205 \times 63) + 111$
   $= 12915 + 111 = 13026$
7.
$$\begin{array}{r} 1\,8\,5 \\ 299\overline{)5\,5\,3\,1\,5} \\ 2\,9\,9 \\ \hline 2\,5\,4\,1 \\ 2\,3\,9\,2 \\ \hline 1\,4\,9\,5 \\ 1\,4\,9\,5 \\ \hline \times \end{array}$$

8.
$$\begin{array}{r} 2\,0\,1\,0 \\ \times\,2\,5 \\ \hline 1\,0\,0\,6\,0 \\ 4\,0\,2\,4\,0 \\ \hline 5\,0\,3\,0\,0 \end{array}$$

$$\begin{array}{r} 5\,6\,0 \\ \times\,1\,2 \\ \hline 1\,1\,2\,0 \\ 5\,6\,0\,0 \\ \hline 6\,7\,2\,0 \end{array} \qquad \begin{array}{r} 5\,0\,3\,0\,0 \\ +\,6\,7\,2\,0 \\ \hline 5\,7\,0\,2\,0 \end{array}$$

9. $5\overline{)100000}\ \ 20000$; $10\overline{)20000}\ \ 2000$

10. $75 \times 16 = 450 + 750 = 1200$; $90 \times 14 = 360 + 750 = 1260$

$1200 + 1260 + 24 = 2484$

11. (a) $222\overline{)4568}\ \ 20$, 444, 128

(b) $106\overline{)59602}\ \ 562$, 530, 660, 636, 242, 216, 26

(c) $356\overline{)13257}\ \ 37$, 1068, 2577, 2492, 85

(c) $492\overline{)40896}\ \ 81$, 3936, 536, 492, 44

12. (a) $768 + 10 = 7680$
(b) $1110 \div 10 = 111$
(c) $800 \div 80 = 10$
(d) $1 + 10 = 11$
(e) $1 + 999 = 1000$
(f) $1 + 11 = 12$

EXERCISE–2.3

1. (a) $40 + [80 + \{(17) \times 7\}]$
$= 40 + [80 + \{119\}]$
$= 40 + [80 + 119]$
$= 40 + 199 = 239$

(b) 25 of $[70 - \{9 \times 7 + (14 - 3 \text{ of } 4)\}]$
$= 25 \text{ of } [70 - \{63 + (2)\}]$
$= 25 \text{ of } [70 - \{63 + 027\}]$
$= 25 \text{ of } [70 - \{650\}]$
$= 25 \text{ of } [5] = 25 \text{ of } = 115$

(c) $(12 \times 3) \div 4 \times 5 - 7 + 3 \times (9 - 5)$
$= 36 \div 4 \times 5 - 7 + 3 \times 4$
$= 9 \times 5 - 7 + 12$
$= 45 + 12 - 7 = 59 - 7$
$= 52$

(d) $\{(112 + 3) - (5 \times 10 - 1) + 6\} \div 4$
$= \{115 - (50 - 17) + 6\} \div 4$
$= \{115 - 33 + 6\} \div 4$
$= \{121 - 33\} \div 4$
$= 88 \div 4 = 22$

2. (a) $30 \div (8 + 11 - 4) + 7$
$= 30 \div (19 - 4) + 7$
$= 30 \div 15 + 7 = 2 + 7 = 9$

(b) $20 \div \{6 + 4 - (8 - 8)$
$= 20 \div \{10 - 0\}$
$= 20 - 10 = 10$

(c) $25 - [20 - \{10 - \{10 - 5\}]$
$= 25 - [20 - \{10 - 5\}]$

$= 25 - [20 - 5] = 25 - 15$
$= 10$

(d) $37 + 13 + 50 - 30$
$= 90 - 30 = 60$

(e) $6 + [12 - \{8 + 3 - (54 - 52 + 1)\}]$
$= 6 + [12 - \{11 - (55 - 52)\}]$
$= 6 + [12 - \{11 - 3\}]$
$= 6 + (12 - 8) = 6 + 4 = 10$

MCQS

1. (a) 2. (b) 3. (c) 4. (b) 5. (b) 6. (c)
7. (c) 8. (b) 9. (a)

TRY IT

1.

Column A	Column B
(a)	(ii)
(b)	(iv)
(c)	(i)
(d)	(iii)

2. (a) Prime, composite (b) 2 (c) 2
(d) 4 (e) composite

EXERCISE–3.1

1. (a) True (b) False (c) False
(d) True (e) False (f) False
(g) False (h) True
2. (a) Yes (b) No (c) Yes (d) No
3. (a) 7 + 11 + 13 (b) 7 + 11 + 17
(c) 5 + 17 + 19
4. (a) 67 (b) 73 (c) 101
5. (a) 77, 84 (b) 105, 126, 147, 168, 189
6. No, product of two prime umbers is a composite number
7. No, they have common factors
8. 31, 37, 41, 43, 47
9. Only one i.e., 2
10. (3, 5) (5, 7) (11, 13) (17, 19); no, 49 and 51 are not prime numbers.
11. (3, 5) (5, 7) (7, 11) (11, 13) (13, 17) (17, 19)

TRY IT

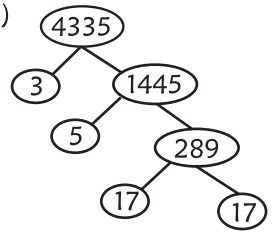
1. (a) True (b) False (c) True (d) True (e) False

EXERCISE–3.2

1. (a), (b) 2. (a), (b), (c) 3. (a), (b)
4. (b), (c) 5. (b), (c) 6. (b), (c)
7. (a), (b), (c) 8. (a), (b), (c)
9. (a), (f) 10. (a), (b), (d)
11. (a) 12, (b) 1 12. (a) 3, (b) 5, 13. (a) 5 (b) 6

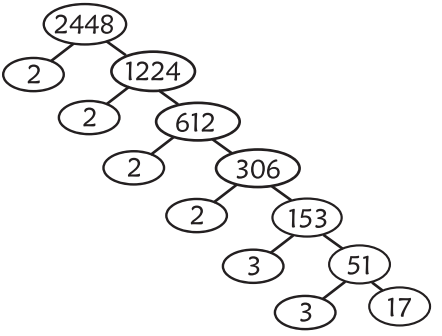
EXERCISE–3.3

1. (a)



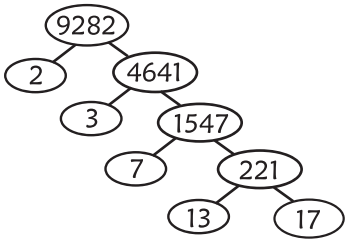
$4335 = 3 \times 5 \times 17 \times 17$

(b)



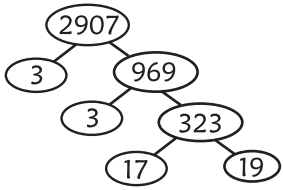
$2448 = 2 \times 2 \times 2 \times 2 \times 3 \times 3 \times 13$

(c)



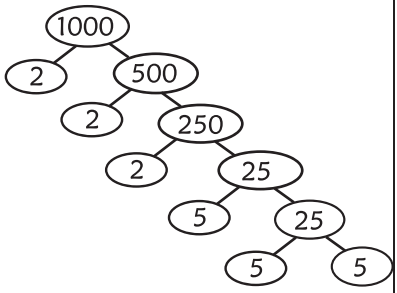
$9282 = 2 \times 3 \times 7 \times 13 \times 17$

(d)



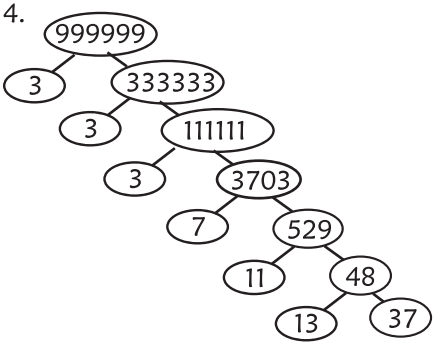
$2907 = 3 \times 3 \times 17 \times 19$

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



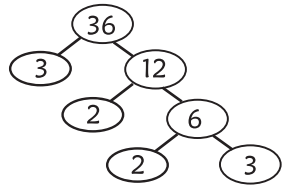
$1000 = 2 \times 2 \times 2 \times 5 \times 5 \times 5$

4.

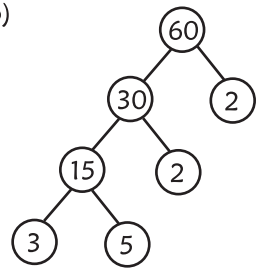


$999999 = 3 \times 3 \times 3 \times 7 \times 11 \times 13 \times 37$

5. (a)



(b)



EXERCISE-3.4

1. (a)

$$14\overline{)84}\ 6 \quad (84 - 84 = 0)$$

$$14\overline{)42}\ 3 \quad (42 - 42 = 0)$$

(b)

$$140\overline{)630}\ 4 \quad (630 - 560 = 70)$$

$$70\overline{)140}\ 2 \quad (140 - 140 = 0)$$

2. (a)

$$155\overline{)1302}\ 8 \quad (1302 - 1240 = 62)$$

$$62\overline{)155}\ 2 \quad (155 - 124 = 31)$$

$$31\overline{)62}\ 2 \quad (62 - 62 = 0)$$

$$31\overline{)341}\ 11 \quad (341 - 310 = 31)$$

(b)
$$\begin{array}{r} 3 \\ 1197\overline{)4\ 3\ 8\ 9} \\ 3\ 5\ 9\ 1 \\ \hline \end{array} \qquad \begin{array}{r} 1 \\ 399\overline{)5\ 3\ 2\ 0} \\ 3\ 9\ 9 \\ \hline \end{array}$$

$$\begin{array}{r} 1 \\ 798\overline{)1\ 1\ 9\ 7} \\ 7\ 9\ 8 \\ \hline \times \end{array} \qquad \begin{array}{r} 2 \\ 399\overline{)7\ 9\ 8} \\ 7\ 9\ 8 \\ \hline \times \end{array}$$

$$\begin{array}{r} 3 \\ 133\overline{)3\ 9\ 9} \\ 3\ 9\ 9 \\ \hline \times \end{array}$$

3. (a) $343 = 1 \times 7 \times 7 \times 7$; $432 = 2 \times 2 \times 2 \times 2 \times 3 \times 3 \times 3$; C.F. = 1. Hence, they are co-prime. (b) $847 = 1 \times 7 \times 11 \times 11$; $1014 = 1 \times 2 \times 3 \times 13 \times 13$; C.F. = 1. Hence, they are prime.

4. (a) $\frac{7}{9}$ (b) $\frac{37}{60}$ (c) $\frac{13}{17}$

5. (a)
$$\begin{array}{r} 1 \\ 450\overline{)8\ 2\ 5} \\ 4\ 5\ 0 \\ \hline \end{array} \qquad \begin{array}{r} 1 \\ 375\overline{)4\ 5\ 0} \\ 3\ 7\ 5 \\ \hline \end{array}$$

$$\begin{array}{r} 5 \\ 75\overline{)3\ 7\ 5} \\ 3\ 7\ 5 \\ \hline \end{array}$$

6.
$$\begin{array}{r} 1 \\ 700\overline{)1\ 2\ 9\ 5} \\ 7\ 0\ 0 \\ \hline \times \end{array} \qquad \begin{array}{r} 1 \\ 595\overline{)7\ 0\ 0} \\ 5\ 9\ 5 \\ \hline \end{array}$$

$$\begin{array}{r} 5 \\ 105\overline{)5\ 9\ 5} \\ 5\ 2\ 5 \\ \hline \end{array} \qquad \begin{array}{r} 1 \\ 70\overline{)1\ 0\ 5} \\ 7\ 0 \\ \hline \end{array}$$

$$\begin{array}{r} 2 \\ 35\overline{)7\ 0} \\ 7\ 0 \\ \hline \end{array} \qquad \begin{array}{r} 1 \\ 35\overline{)3\ 8\ 5} \\ 3\ 5 \\ \hline 3\ 5 \\ \hline 3\ 5 \\ \hline \times \end{array}$$

7.
$$\begin{array}{r} 1 \\ 700\overline{)7\ 5\ 0} \\ 7\ 0\ 0 \\ \hline \end{array} \qquad \begin{array}{r} 14 \\ 50\overline{)7\ 0\ 0} \\ 5\ 0 \\ \hline 2\ 0\ 0 \\ 2\ 0\ 0 \\ \hline \times \end{array}$$

8.
$$\begin{array}{r} 1 \\ 490\overline{)8\ 8\ 2} \\ 4\ 9\ 0 \\ \hline \end{array} \qquad \begin{array}{r} 1 \\ 392\overline{)4\ 9\ 0} \\ 3\ 9\ 2 \\ \hline \end{array}$$

$$\begin{array}{r} 4 \\ 98\overline{)3\ 9\ 2} \\ 3\ 9\ 2 \\ \hline \times \end{array} \qquad \begin{array}{r} 6 \\ 98\overline{)5\ 8\ 8} \\ 5\ 8\ 8 \\ \hline \times \end{array}$$

9.
$$\begin{array}{r} 2 \\ 552\overline{)1\ 3\ 2\ 0} \\ 1\ 1\ 0\ 4 \\ \hline \end{array} \qquad \begin{array}{r} 2 \\ 552\overline{)1\ 3\ 2\ 0} \\ 1\ 1\ 0\ 4 \\ \hline \end{array}$$

$$\begin{array}{r} 2 \\ 216\overline{)5\ 5\ 2} \\ 4\ 3\ 2 \\ \hline \end{array} \qquad \begin{array}{r} 2 \\ 120\overline{)2\ 1\ 6} \\ 1\ 2\ 0 \\ \hline \end{array}$$

Least No. of square tile

$$= \frac{\text{Area of cooryard}}{\text{Area of tile}}$$

$$= \frac{55}{6} = 4180$$

10. $1277 - 3 = 1274$
$1368 - 3 = 1365$

$$\begin{array}{r} 1 \\ 1274\overline{)1\ 3\ 6\ 5} \\ 1\ 2\ 7\ 4 \\ \hline \end{array} \qquad \begin{array}{r} 14 \\ 91\overline{)1\ 2\ 7\ 4} \\ 9\ 1 \\ \hline 3\ 6\ 4 \\ 3\ 6\ 4 \\ \hline \times \end{array}$$

11. $404 - 5 = 399$
$442 - 5 = 437$

$$\begin{array}{r} 1 \\ 399\overline{)4\ 3\ 7} \\ 3\ 9\ 9 \\ \hline \end{array} \qquad \begin{array}{r} 1 \\ 38\overline{)3\ 9\ 9} \\ 3\ 8 \\ \hline \end{array}$$

$$\begin{array}{r} 2 \\ 19\overline{)3\ 8} \\ 3\ 8 \\ \hline \times \end{array}$$

12. $445 - 4 = 441$
$572 - 5 = 567$
$699 - 6 = 693$

$$\begin{array}{r} 1 \\ 441\overline{)6\ 9\ 3} \\ 4\,4\,1 \\ \hline 189\overline{)2\ 5\ 2} \\ 1\ 8\ 9 \\ \hline \end{array} \qquad \begin{array}{r} 1 \\ 252\overline{)4\ 4\ 1} \\ 3\,2\,5\,2 \\ \hline 63\overline{)1\ 8\ 3} \\ 1\ 8\ 3 \\ \hline \times \end{array}$$

$$\begin{array}{r} 9 \\ 63\overline{)5\ 6\ 7} \\ 5\ 6\ 7 \\ \hline \times \end{array}$$

13. $398 - 7 = 381$
$436 - 11 = 425$
$452 - 10 = 442$

$$\begin{array}{r} 1 \\ 391\overline{)4\ 4\ 2} \\ 3\ 9\ 1 \\ \hline \end{array} \qquad \begin{array}{r} 7 \\ 51\overline{)3\ 9\ 1} \\ 3\ 5\ 7 \\ \hline \end{array}$$

$$\begin{array}{r} 1 \\ 34\overline{)5\ 1} \\ 3\ 4 \\ \hline \end{array} \qquad \begin{array}{r} 2 \\ 17\overline{)3\ 4} \\ 3\ 4 \\ \hline \times \end{array}$$

$$\begin{array}{r} 1 \\ 391\overline{)4\ 4\ 2} \\ 3\ 9\ 1 \\ \hline \end{array} \qquad \begin{array}{r} 25 \\ 17\overline{)4\ 2\ 5} \\ 3\ 4 \\ \hline 8\ 5 \\ 8\ 5 \\ \hline \times \end{array}$$

EXERCISE – 3.5

1. (a)
$$\begin{array}{r|l} 2 & 24,\ 36 \\ \hline 2 & 12,\ 18 \\ \hline 3 & 6,\ 9 \\ \hline & 2,\ 3 \end{array}$$

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

(b)
$$\begin{array}{r|l} 2 & 16,\ 28,\ 40 \\ \hline 2 & 8,\ 14,\ 20 \\ \hline 2 & 4,\ 7,\ 10 \\ \hline & 2,\ 7,\ 5 \end{array}$$

$2 \times 2 \times 2 \times 2 \times 7 \times 5 = 560$

(c)
$$\begin{array}{r|l} 2 & 40,\ 48,\ 45 \\ \hline 2 & 20,\ 24,\ 45 \\ \hline 2 & 10,\ 12,\ 45 \\ \hline 3 & 5,\ 6,\ 45 \\ \hline 5 & 5,\ 2,\ 15 \\ \hline & 1,\ 2,\ 3 \end{array}$$

$2 \times 2 \times 2 \times 3 \times 5 \times 2 \times 3 = 720$

(d)
$$\begin{array}{r|l} 2 & 64,\ 72,\ 96 \\ \hline 2 & 32,\ 36,\ 48 \\ \hline 2 & 16,\ 18,\ 24 \\ \hline 2 & 8,\ 9,\ 12 \\ \hline 2 & 4,\ 9,\ 6 \\ \hline 3 & 2,\ 9,\ 3 \\ \hline & 2,\ 3,\ 1 \end{array}$$

$2 \times 2 \times 2 \times 2 \times 2 \times 3 \times 2 \times 3 = 576$

2. (a)
$$\begin{array}{r|l} 2 & 8,\ 12,\ 16,\ 30 \\ \hline 2 & 4,\ 6,\ 8,\ 15 \\ \hline 2 & 2,\ 3,\ 4,\ 15 \\ \hline 3 & 1,\ 3,\ 2,\ 15 \\ \hline & 1,\ 1,\ 2,\ 5 \end{array}$$

$2 \times 2 \times 2 \times 3 \times 2 \times 5 = 240$

(b)
$$\begin{array}{r|l} 13 & 117,\ 221, \\ \hline & 9,\ 17 \end{array}$$

$13 \times 9 \times 17 = 1547$

(c)
$$\begin{array}{r|l} 2 & 234,\ 572 \\ \hline 13 & 117,\ 286 \\ \hline & 9,\ 22 \end{array}$$

$2 \times 13 \times 9 \times 22 = 5148$

(d)

2	144, 180, 384
2	72, 90, 192
2	36, 45, 96
2	18, 45, 48
3	9, 45, 24
3	3, 15, 8
	1, 5, 8

$2 \times 2 \times 2 \times 2 \times 3 \times 3 \times 5 \times 8$
$= 5760$

3. (a)

2	234, 572
13	117, 286
	9, 22

$2 \times 13 \times 9 \times 22 = 5148$

(b)

2	576, 720
2	288, 360
2	144, 180
2	72, 90
3	36, 45
3	12, 15
	4, 5

$2 \times 2 \times 2 \times 2 \times 3 \times 3 \times 4 \times 5$
$= 2480$

(c)

2	1152, 1664
2	576, 832
2	288, 416
2	144, 208
2	72, 104
2	36, 52
2	18, 26
	9, 13

$2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 9 \times 13$
$= 14976$

4. L.C.M $= \dfrac{\text{Product of number}}{\text{HCF of two number}}$

$= \dfrac{3072}{16}$

$= 192$

5. H.C.F $= \dfrac{\text{Product of numbers}}{\text{LCM of two number}}$

$= \dfrac{128}{30}$

$= 4$

6. Other no.

$= \dfrac{\text{LCM} \times \text{HCF}}{\text{Ist number}}$

$= \dfrac{2175 \times 145}{725}$

$= 435$

7.

2	2, 3, 4, 5, 6, 7
3	1, 3, 2, 5, 3, 7
	1, 1, 2, 5, 1, 7

$2 \times 3 \times 2 \times 5 \times 7 = 420$

Thus $10000 - 340 = 9660$
And $420 - 340 = 80$
And $10000 + 80 = 100080$

8.

2	16, 24, 40
2	8, 12, 20
2	4, 6, 10
	2, 3, 5

$2 \times 2 \times 2 \times 2 \times 3 \times 5$
$= 240 + 8 = 248$

9. $33 - 5 = 28$
$39 - 5 = 34$

3	33, 39
	11, 13

$3 \times 11 \times 13$
$= 429 + 5 = 432$

10.

5	5, 10, 15, 20, 25
2	1, 2, 3, 4, 5
	1, 1, 3, 2, 5

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

11.

4	6, 8, 20
2	3, 4, 10
	3, 2, 5

$4 \times 3 \times 2 \times 5 = 120$ hr
2 hours or 8 am 12 hours = 10
Five digits greatest number
$= 999990 - 300 = 99699$

12.

2	4, 12, 20, 24
3	1, 3, 5, 6
	1, 1, 5, 2

$2 \times 2 \times 3 \times 2 \times 5 = 120$ hr
2 hours or 8 am 12 hours = 10
Five digits greatest number
$= 10000 - 117 = 1117$

13.

5	80, 85, 90
2	16, 17, 18
	8, 17, 9

$5 \times 2 \times 8 \times 17 \times 9 = 1240$ hr
= 12 mono cm

EXERCISE – 4.1

1. (a) > (b) < (c) < (d) > (e) > (f) >
2. (a) 1, 2, 3, 4, 5, 6, 7 (b) – 1, – 2, – 3, – 4, – 5, – 6, – 7 (c) – 3, – 2, – 1, 0, 1, 2, 3 (d) – 112, – 113, – 114
3. (a) – 21, – 20, – 19, – 18, (b) – 95, – 94, – 93, – 92 (c) – 33, – 34, – 35, – 36 (d) – 71, – 72, – 73, – 74
4. (a) – 10, – 9, – 7, – 5, 0, 3, 5 (b) – 84, – 48, – 45, – 33, – 30
5. (a) 9, 4, 0, – 4, – 6, – 9 (b) – 1, – 7, – 15, – 18, – 20
6. (a) + 234 (b) – 2085 (c) + 4096
7. (a) Do it yourself.
   (b) Do it yourself.
   (c) Do it yourself.
   (d) Do it yourself.
8. (a) False, zero is neither positive nor negative
   (b) False, – 1 is the greatest negative integer (c) True
   (d) True (e) True
9. (a) 16 (b) – 7 (c) 12 (d) 25
10. (a) 3°C (b) – 6°C (c) – 8°C

EXERCISE – 4.2

1. (a) $29 + 16 = 45$
   (b) $-3 + 5 = 2$
   (c) $-8 + (+3) = -5$
   (d) $-4 + 27 = -23$
   (e) $(-2) + (-10) = -12$
   (f) $-15 + 15 = 0$
2. (a) True (b) False (c) False (d) False (e) False
3. Do it yourself.
4. (a) $9 + (-7) = 9 - 7 = 2$
   (b) $4 + (-12) = 4 - 12 = -8$
   (c) $(-2) + (-6) = -8$
   (d) $(-7) + 14 = -7 + 14 = 7$
   (e) $(-1) + (-2) + (-4) = -7$
   (f) $(-3) + 5 + (-2) = 0$
5. (a) – 13, 18 = 5
   (b) – 45, 24 = – 23
   (c) – 256, 150 = – 106
   (d) – 315, (–100) = – 415
   (e) – 500, – 680 = 1380
   (f) – 20, 8 = – 12
   (g) – 463, 254 = 209
   (h) – 1060, 900 = – 160

6. (a) $36 - 3 - 66 + 35$
$= 36 + 35 - 69 = 71 - 632$
(b) $- 25 - 9 + 7 + 35$
$= - 35 + 42 = 8$
(c) $= 17 - 43 - 3 + 68$
$= 17 + 68 - 106 = 85 - 106$
$= - 21$
7. $4° - 7° = - 3°$ Ans.

EXERCISE – 4.3

1. (a) $34 - 24 = 10$
(b) $- 27 + 8 = - 19$
(c) $- 7 + 7 = 0$
(d) $841 + - 329 = 512$
(e) $- 4 + - 8 = - 12$
2. (a) < (b) = (c) > (d) >
(e) > (f) <
3. (a) $\begin{array}{r} -15 \\ \hline -16 \\ \hline 1 \end{array}$ (b) $\begin{array}{r} -286 \\ \hline -451 \\ \hline 165 \end{array}$
(c) $\begin{array}{r} -2154 \\ \hline -5123 \\ \hline 7277 \end{array}$ (d) $\begin{array}{r} -562 \\ \hline -1040 \\ \hline 478 \end{array}$
(e) $\begin{array}{r} -52 \\ \hline +52 \\ \hline 104 \end{array}$ (f) $\begin{array}{r} -0 \\ \hline +725 \\ \hline 725 \end{array}$
4. (a) $- 10 - 5 (- 35)$
$= - 15 + 35 = 20$
(b) $- 15 + 34 - 14 = 6$
$= - 15 + 34 - 20$
$= - 35 + 34 = 1$
(c) $- 8 + (- 97) + (- 80)$
$= - 8 - 9 - 80$
$= - 97$
(d) $100 - (- 100) + (- 100)$
$= - 26 + (- 13) + (- 52)$
$= - 26 - 13 - 53 = 92$
(e) $- 26 + (- 13) + (- 52)$
$= - 26 - 13 - 52$
(f) $- 13 + (- 17) - (- 22)$
$- (- 40)$
$= - 13 - 17 + 22 + 40$
$= - 30 + 13 - 53 = 92$
5. $- 700 + 250 = - 450$
6. $35 + (- 5) + (- 10) + 20$
$= 35 - 5 - 10 + 20$
$= 55 - 15 = 40$
7. $2°C - 5°C = - 3°C$
8. $- 4°C - 3°C = - 7°C$ on saturday
$- 7°C + 5°C = - 2°C$ on sunaday.

MCQS

Tick (✓) the correct option in each of the following :

1. (c) 2. (c) 3. (c) 4. (a) 5. (b)
6. (b) 7. (b) 8. (c) 9. (b) 10. (a)

EXERCISE – 5.1

1. (a) $\frac{4}{5}$ (b) $\frac{3}{10}$ (c) $\frac{5}{12}$ (d) $\frac{8}{9}$
2. (a) Two-sevenths
(b) Seven-eighths
(c) Four-ninths
(d) Nine-sixteenths
3. Do it yourself
4. (a) 12 balloons (b) 15 pens
(c) 27 toffees.
5. (a) $\frac{32}{112}, \frac{98}{112}, \frac{40}{112}, \frac{63}{112}$
(b) $\frac{168}{210}, \frac{245}{210}, \frac{180}{210}, \frac{189}{210}$
(c) $\frac{28}{140}, \frac{98}{140}, \frac{105}{140}, \frac{100}{140}$
(d) $\frac{100}{120}, \frac{105}{120}, \frac{110}{120}, \frac{36}{120}$
(e) $\frac{20}{60}, \frac{24}{60}, \frac{45}{60}, \frac{10}{60}$
6. (a) $\frac{4}{5}$ (b) $\frac{3}{7}$ (c) $\frac{2}{3}$ (d) $\frac{1}{3}$ (e) $\frac{1}{5}$ (f) $\frac{3}{5}$

7. (a), (c), (d) 8. (c), (d)

9. (a) $\frac{11}{5}$ (b) $\frac{13}{4}$ (c) $\frac{57}{8}$ (d) $\frac{23}{11}$

10. (a) $2\frac{2}{3}$ (b) $3\frac{3}{4}$ (c) $5\frac{2}{5}$ (d) $5\frac{15}{17}$

EXERCISE – 5.2

1. (a) $\frac{6}{10}, \frac{9}{15}, \frac{12}{20}, \frac{15}{25}$

   (a) $\frac{8}{14}, \frac{12}{12}, \frac{16}{28}, \frac{20}{35}$

   (c) $\frac{12}{22}, \frac{18}{33}, \frac{24}{44}, \frac{30}{55}$

   (d) $\frac{16}{26}, \frac{24}{39}, \frac{32}{52}, \frac{40}{65}$

   (e) $\frac{14}{18}, \frac{21}{27}, \frac{28}{36}, \frac{35}{45}$

   (f) $\frac{10}{24}, \frac{15}{36}, \frac{20}{48}, \frac{25}{60}$

2. (a) Not equivalent
   (b) Not equivalent
   (c) Equivalent
   (d) Not equivalent
   (e) Equivalent
   (f) Equivalent

3. $\frac{15}{25}$ 4. $\frac{45}{72}$ 5. $\frac{4}{5}$ 6. $\frac{5}{6}$ 7. (a) $\frac{2}{3}$
   (b) $\frac{11}{12}$ (c) $\frac{3}{4}$ 8. (a) $\frac{3}{8}$ (b) $\frac{3}{7}$
   (c) $\frac{5}{9}$

9. (a) $\frac{3}{4}, \frac{5}{6}, \frac{23}{24}$ (b) $\frac{3}{8}, \frac{5}{9}, \frac{2}{3}, \frac{5}{6}$
   (c) $\frac{2}{7}, \frac{1}{3}, \frac{5}{6}, \frac{8}{9}$
   (d) $\frac{2}{13}, \frac{5}{13}, \frac{8}{13}, \frac{11}{13}$
   (e) $\frac{3}{21}, \frac{10}{21}, \frac{15}{21}, \frac{25}{21}$

10. (a) $\frac{9}{11}, \frac{5}{7}, \frac{3}{8}$ (b) $\frac{4}{5}, \frac{3}{4}, \frac{11}{20}, \frac{7}{15}$
    (c) $\frac{7}{8}, \frac{13}{24}, \frac{5}{16}$ (d) $\frac{21}{17}, \frac{19}{17}, \frac{11}{17}, \frac{5}{17}$ (e) $\frac{22}{31}, \frac{13}{31}, \frac{10}{31}, \frac{7}{31}$

EXERCISE – 5.3

1. (a) $\frac{8}{9} + \frac{11}{18} + \frac{13}{27} + \frac{5}{6}$

$= \frac{48 + 33 + 26 + 45}{54}$

$= \frac{152}{54} = 2\frac{22}{27}$

(b) $3\frac{3}{4} + 2\frac{1}{6} + 1\frac{5}{8}$

$= \frac{15}{4} + \frac{13}{6} + \frac{13}{8}$

$= \frac{90 + 52 + 39}{24}$

$= \frac{181}{24} = 7\frac{7}{12}$

(c) $3\frac{1}{2} + 4\frac{2}{3} + 7\frac{5}{6}$

$= \frac{7}{2} + \frac{14}{3} + \frac{47}{6}$

$= \frac{21 + 28 + 47}{6}$

$= \frac{96}{6} = 16$

(d) $1\frac{7}{8} + 1\frac{1}{2} + 1\frac{3}{4}$

$= \frac{15}{8} + \frac{3}{2} + \frac{7}{4}$

$= \frac{15 + 12 + 14}{8}$

$= \frac{41}{8} = 5\frac{1}{8}$

2. (a) $\frac{11}{12} - \frac{13}{16} = \frac{44 - 39}{48} = \frac{5}{48}$

(b) $2\frac{3}{4} - 1\frac{5}{6} = \frac{11}{4} - \frac{11}{6}$

$= \frac{33 - 22}{12} = \frac{11}{12}$

(c) $6\frac{2}{3} - 3\frac{3}{4} = \frac{20}{3} - \frac{15}{4}$

$= \frac{80 - 45}{12} = \frac{35}{12} = 2\frac{11}{12}$

(d) $3\frac{5}{8} - 2\frac{5}{12} = \frac{29}{8} - \frac{29}{12}$

$= \frac{89 - 58}{24} = \frac{29}{24} = 1\frac{5}{24}$

3. (a) $4 + \frac{3}{10} - 1\frac{8}{15} = 4\frac{3}{10} - \frac{23}{15}$

$= \frac{120 - 9 - 46}{30} = \frac{129 - 46}{30}$

$= \frac{83}{30} - 2\frac{23}{30}$

(b) $1\frac{3}{4} + 2\frac{5}{7} - 1\frac{3}{14} = \frac{7}{4} + \frac{19}{7}$

$- \frac{17}{14}$

$= \frac{49 + 76 - 34}{28} = \frac{125 - 34}{28}$

$= \frac{91}{28} = 3\frac{1}{4}$

(c) $7\frac{5}{8} + 3\frac{1}{6} - 2\frac{3}{4} = \frac{40}{8}$

$- \frac{19}{6} - \frac{11}{4}$

$= \frac{240 - 76 - 66}{24}$

$= \frac{240 - 142}{24}$

$= \frac{98}{24} = 4\frac{1}{12}$

(d) $2\frac{5}{12} + 1\frac{19}{60} - 2\frac{11}{40} = \frac{29}{12}$

$+ \frac{79}{60} - \frac{91}{40}$

$= \frac{290 + 158 - 273}{120}$

$= \frac{721}{120} = 6\frac{1}{120}$

4. $7\frac{3}{4} + 9\frac{2}{5} = \frac{31}{4} + \frac{47}{5}$

$= \frac{155 + 188}{20} = \frac{343}{20} = 17\frac{3}{20}$

5. $15\frac{1}{2} + 16\frac{3}{4} + 17\frac{1}{5} = \frac{31}{2} + \frac{67}{4}$

$+ \frac{86}{5} = \frac{310 + 335 + 344}{20}$

$= \frac{989}{20} = 44\frac{9}{20}$

6. $7\frac{1}{5} - 5\frac{1}{15} = \frac{36}{5} - \frac{76}{15}$

$= \frac{108 - 76}{15} = \frac{32}{15} = 2\frac{2}{15}$

7. $2\frac{5}{9} - 2\frac{1}{3} = \frac{23}{9} + \frac{7}{3}$

$+ \frac{23 - 21}{9} = \frac{44}{9} = \frac{141}{18} - \frac{14}{9}$

$= \frac{141 - 24}{18} = \frac{117}{18} = 6\frac{9}{18}$

$= 6\frac{1}{2}$

8. $10\frac{1}{2} - 4\frac{5}{8} = \frac{21}{2} - \frac{37}{8}$

$= \frac{84 - 37}{8} = \frac{47}{8} = 5\frac{7}{8}$

9. $12\frac{1}{2} + 25\frac{3}{4} + 10\frac{1}{4} = \frac{25}{2} + \frac{103}{4}$

$+ \frac{41}{4} = \frac{50 + 103 + 41}{4}$

$= \frac{194}{4} = 48\frac{2}{4} = 48\frac{1}{2}$

$= 100 - 48.50 = 51.50$

10. $5\frac{1}{2} + 3\frac{2}{3} = \frac{11}{2} + \frac{11}{3} = \frac{33 + 22}{6}$

$= \frac{55}{6} = 9\frac{1}{6}$

MCQS

1. (b) 2. (b) 3. (a) 4. (b) 5. (d) 6. (d)
   7. (a) 8. (b) 9. (b) 10. (b)

EXERCISE – 6.1

Note : W ⟶ Whole number part;
D ⟶ Decimal part

1. (a) W ⟶ 0, D ⟶ .57
   (b) W ⟶ 1, D ⟶ .21
   (c) W ⟶ 0, D ⟶ .651
   (d) W ⟶ 21, D ⟶ .635
   (e) W ⟶ 63, D ⟶ .793
   (f) W ⟶ 21, D ⟶ .935
   (g) W ⟶ 16, D ⟶ .108
   (h) W ⟶ 25, D ⟶ .169
   (i) W ⟶ 1, D ⟶ .738
2. (a) 0.7 (b) 1.1 (c) 1.3 (d) 0.11
   (e) 1.35 (f) 1.765 (g) 1.75
   (h) 17.689 (i) 51.728
3. (a) 0.99 (b) 0.066 (c) 75000.55
   (d) 519.355
4. (a) Seven decimal three four
   (b) One hundred twenty seven decimal four five
   (c) Five decimal zero zero five
   (d) Twenty seven decimal three five
   (e) One decimal seven five six
   (f) Two hundred eighty two decimal one six one
   (g) Three thousand five hundred twelve decimal seven seven
5. (a) 3 (b) 2 (c) 1 (d) 3 (e) 3 (f) 4
6. (a) $\frac{117}{100}$ (b) $\frac{9}{10}$ (c) $\frac{35}{2}$ (d) $\frac{467}{4}$
   (e) $\frac{7229}{1250}$ (f) $\frac{21}{2}$ (g) $\frac{1057}{10}$
   (h) $\frac{121}{2}$ (i) $\frac{2789}{1000}$ (j) $\frac{1357}{200}$
   (k) $\frac{2407}{6250}$ (l) $\frac{16873}{10000}$ (m) $\frac{377551}{100000}$
   (n) $\frac{30567}{2000}$ (o) $\frac{77189}{10000}$

EXERCISE – 6.2

1. Do it yourself.
2. (a)
$$\begin{array}{r} 60.000 \\ 5.000 \\ 0.500 \\ 0.070 \\ 0.007 \\ \hline 65.577 \end{array}$$
(b)
$$\begin{array}{r} 300.000 \\ 60.000 \\ .200 \\ 0.060 \\ .005 \\ \hline 360.265 \end{array}$$
(c)
$$\begin{array}{r} 5.00 \\ 0.70 \\ 0.05 \\ \hline 5.75 \end{array}$$
(d)
$$\begin{array}{r} 10.000 \\ 5.000 \\ 0.400 \\ 0.050 \\ 0.006 \\ \hline 15.456 \end{array}$$
3. (a) $0.751 = \frac{7}{10} + \frac{5}{100} + \frac{1}{1000}$
   (b) $5.061 = 5 + \frac{0}{10} + \frac{6}{100} + \frac{1}{1000}$
   (c) $16.699 = 10 + 6 + \frac{6}{10} + \frac{9}{100} + \frac{9}{1000}$
   (d) $0.609 = \frac{6}{10} + \frac{0}{100} + \frac{9}{1000}$
4. Do it yourself.
5. Do it yourself.

EXERCISE – 6.3

1. (a) 7.800; 3.990; 1.682
   (b) 16.700; 18.300
   (c) 561.5000; 389.6001; 175.0002
   (d) 0.7800; 9.1000; 0.0075
   (e) 13.6680; 1.2000; 6.7389
   (f) 1.9500; 6.0050; 3.2966
2. (a) 2.50; 2.500; 2.5000; 2.50000
   (b) 0.40; 0.400; 0.4000; 0.40000 (c) 71.50; 71.500; 71.5000; 71.50000
   (d) 3.890; 3.8900; 3.89000; 3.890000
   (e) 12.70; 12.700; 12.7000; 12.70000 (f) 79.850; 79.85000; 79.850000
   (g) 36.10; 36.100; 36.1000; 36.10000
   (h) 25.450; 25.4500; 25.45000; 25.450000
3. (a) $1.678 < 1.687$
   (b) $2.40 = 2.4$
   (c) $5.1 > 5.001$
   (d) $71.005 < 71.05$
   (e) $21.6785 < 21.768$
   (f) $75.125 < 75.218$
   (g) $176.16 < 176.166$
   (h) $221.768 > 221.678$
   (i) $73.915 < 73.951$
4. (a) 2.00, 1.80, 1.75, 0.70
   (b) 5.660, 3.685, 3.610, 2.180
   (c) 6.10, 2.16, 1.62, 1.60
5. (a) 28.788, 29.030, 70.860, 71.600
   (b) 169.33, 189.30, 819.28, 918.82, 187.67, 718.50 781.76, 817.60

EXERCISE – 6.4

1. (a)
$$\begin{array}{r} 3.60 \\ +16.20 \\ +18.75 \\ \hline 38.55 \end{array}$$
(b)
$$\begin{array}{r} 5.28 \\ +1.23 \\ +6.10 \\ \hline 12.61 \end{array}$$
(c)
$$\begin{array}{r} 2.25 \\ +1.70 \\ +3.23 \\ \hline 7.18 \end{array}$$
(d)
$$\begin{array}{r} 3.10 \\ +7.28 \\ +1.66 \\ \hline 13.04 \end{array}$$
(e)
$$\begin{array}{r} 16.200 \\ +1.620 \\ +0.162 \\ \hline 17.982 \end{array}$$
(f)
$$\begin{array}{r} 8.00 \\ +2.60 \\ +3.20 \\ +0.32 \\ \hline 14.12 \end{array}$$
(g)
$$\begin{array}{r} 172.50 \\ +2.85 \\ +112.60 \\ \hline 287.95 \end{array}$$
(h)
$$\begin{array}{r} 77.50 \\ +3.36 \\ +1.85 \\ \hline 82.41 \end{array}$$
(i)
$$\begin{array}{r} 667.12 \\ +18.68 \\ +32.60 \\ \hline 718.40 \end{array}$$

2. (a)
$$\begin{array}{r} 50.68 \\ -38.16 \\ \hline 12.52 \end{array}$$
(b)
$$\begin{array}{r} 83.72 \\ -10.72 \\ \hline 73.00 \end{array}$$
(c)
$$\begin{array}{r} 100.81 \\ -32.27 \\ \hline 68.04 \end{array}$$
(d)
$$\begin{array}{r} 200.75 \\ 175.08 \\ \hline 25.67 \end{array}$$
(e)
$$\begin{array}{r} 263.76 \\ -67.38 \\ \hline 196.38 \end{array}$$
(f)
$$\begin{array}{r} 190.00 \\ -116.75 \\ \hline 73.25 \end{array}$$

3. (a) 100.00 − 78.65 = 21.35

(b) 136.750 − 28.805 = 107.945

(c) 33.75 + 12.80 = 20.95

(d) 125.75 − 68.90 = 56.85

(e) 144.65 − 98.80 = 55.85

(f) 375.00 − 198.96 = 176.04

4. (a) 28.40 + 2.35 = 30.75

30.75 − 2.66 = 18.09

(b) 2.83 + 99.80 = 103.63

2.83 + 6.50 = 9.33

103.63 − 9.33 = 94.30

(c) 75.20 + 1.25 = 76.45

2.50 + 8.68 = 11.18

76.45 − 11.18 = 65.27

(d) 77.60 + 78.75 = 156.35

156.35 + 35.28 = 121.07

(e) 29.6 + 15.2 = 44.8

44.8 − 6.9 = 37.9

EXERCISE – 6.5

1. 3.60 + 16.20 + 18.75 = 38.55

2. 701.50 + 35.25 + 736.75

3. 4.50 + 7.25 + 6.00 = 17.75

4. 5.200 + 7.250 + 3.655 = 16.105

5. 1.75 − 10.25 = 12.00

6. 75.15 + 67.50 = 142.65

7. 75.50 + 121.35 = 196.85

500.00 − 196.85 = 303.15

8. (a) 38.3°C + 33.5°C = 4.8°C

(b) 33.5°C + 40.2°C + 38.3°C = 112.0°C

9. 23.400 + 6.250 + 9.375 = 39.025

10. 6.75 − 3.45 = 3.30

EXERCISE – 6.6

1. Multiply

(a) 3.6 × 8 = 28.8

(b) 6.65 × 1.6 = 3990 + 6650 = 10.640

(c)
$$\begin{array}{r} 3.82 \\ \times 2.6 \\ \hline 2292 \\ 764\times \\ \hline 9.932 \end{array}$$

(d)
$$\begin{array}{r} 165.2 \\ \times 1.2 \\ \hline 3304 \\ 1652\times \\ \hline 198.24 \end{array}$$

(e)
$$\begin{array}{r} 2.88 \\ \times 3.2 \\ \hline 576 \\ 864 \\ \hline 9.216 \end{array}$$

(f)
$$\begin{array}{r} 2.65 \\ \times 3.12 \\ \hline 530\times \\ 265\times\times \\ \hline 795\times\times\times \\ \hline 8.2680 \end{array}$$

(g)
$$\begin{array}{r} 7.65 \\ \times 7.1 \\ \hline 765 \\ 5355\times \\ \hline 54.315 \end{array}$$

(h)
$$\begin{array}{r} 2.862 \\ \times 0.1 \\ \hline 0.2862 \end{array}$$

(i)
$$\begin{array}{r} 31.76 \\ \times 2.8 \\ \hline 25408 \\ 6352 \\ \hline 88.928 \end{array}$$

3. (a)
$$\begin{array}{r} 4.1 \\ 4\overline{)16.4} \\ 16 \\ \hline \times 4 \\ \hline 4 \\ \hline \times \\ \hline \end{array}$$

(b)
$$\begin{array}{r} 66.67 \\ 3\overline{)200.01} \\ 18 \\ \hline 20 \\ 18 \\ \hline 20 \\ 18 \\ \hline 21 \\ 21 \\ \hline \times \\ \hline \end{array}$$

(c)
$$\begin{array}{r} 1.21 \\ 11\overline{)13.31} \\ 11 \\ \hline 23 \\ 22 \\ \hline 11 \\ 11 \\ \hline \times \\ \hline \end{array}$$

(d)
$$\begin{array}{r} 1.1 \\ 16\overline{)176} \\ 16 \\ \hline 16 \\ 16 \\ \hline \times \\ \hline \end{array}$$

(e)
$$\begin{array}{r} 1.2 \\ 17\overline{)173.4} \\ 17 \\ \hline \times 34 \\ 34 \\ \hline \times \\ \hline \end{array}$$

(f)
$$\begin{array}{r} 33.35 \\ 15\overline{)500.25} \\ 45 \\ \hline 50 \\ 45 \\ \hline 52 \\ 45 \\ \hline 75 \\ 75 \\ \hline \times \\ \hline \end{array}$$

4. Do it yourself.

5. (a)
$$\begin{array}{r} 4.1 \\ 1.6\overline{)22.4} \\ 16 \\ \hline 64 \\ 64 \\ \hline \times \\ \hline \end{array}$$

(b)
$$
\begin{array}{r}
.24 \\
.17\overline{).\ 4\ 0\ 8} \\
3\ 4 \\
\hline
6\ 8 \\
6\ 8 \\
\hline
\times
\end{array}
$$

(c)
$$
\begin{array}{r}
2.5 \\
2.5\overline{)6.2\ 5} \\
5\ 0 \\
\hline
1\ 2\ 5 \\
1\ 2\ 5 \\
\hline
\times
\end{array}
$$

(d)
$$
\begin{array}{r}
1.21 \\
0.11\overline{)1\ 3.3\ 1} \\
1\ 1 \\
\hline
2\ 3 \\
2\ 2 \\
\hline
1\ 1 \\
1\ 1 \\
\hline
\times
\end{array}
$$

(e)
$$
\begin{array}{r}
.71 \\
0.3\overline{).2\ 1\ 3} \\
2\ 1 \\
\hline
0\ 3 \\
3 \\
\hline
\times
\end{array}
$$

(f)
$$
\begin{array}{r}
7.3 \\
11\overline{)7\ 7.3\ 3} \\
7\ 7 \\
\hline
\times\ 3\ 3 \\
3\ 3 \\
\hline
\times
\end{array}
$$

(g)
$$
\begin{array}{r}
.7 \\
2.8\overline{)0.1\ 9\ 6} \\
1\ 9\ 6 \\
\hline
\times
\end{array}
$$

(h)
$$
\begin{array}{r}
.1601 \\
0.05\overline{)8.0\ 0\ 5} \\
5 \\
\hline
3\ 0 \\
3\ 0 \\
\hline
5 \\
5 \\
\hline
\times
\end{array}
$$

(i)
$$
\begin{array}{r}
.10909 \\
0.7\overline{)7\ 6.3\ 6\ 3} \\
7 \\
\hline
\times\ 6\ 3 \\
6\ 3 \\
\hline
\times\ 6\ 3 \\
6\ 3 \\
\hline
\times
\end{array}
$$

(j)
$$
\begin{array}{r}
.12 \\
0.108\overline{)1.2\ 9\ 6} \\
1\ 0\ 8 \\
\hline
2\ 1\ 6 \\
2\ 1\ 6 \\
\hline
\times
\end{array}
$$

(k)
$$
\begin{array}{r}
27.11 \\
0.03\overline{)8\ 1.3\ 3} \\
6 \\
\hline
2\ 1 \\
2\ 1 \\
\hline
3 \\
3 \\
\hline
3 \\
3 \\
\hline
\times
\end{array}
$$

(l)
$$
\begin{array}{r}
.110 \\
0.04\overline{)4.4\ 1} \\
4 \\
\hline
\times\ 4 \\
4 \\
\hline
\times\ 1
\end{array}
$$

EXERCISE – 6.7

1.
```
      9.25
46)4 2 5.0 0
   4 1 4
   -------
     1 1 5
       9 2
     -----
       2 3 0
       2 3 0
     -------
           ×
```

2.
```
     27.25
75)2 0 4 3.7 5
   1 5 0
   -------
     5 4 3
     5 2 5
   -------
       1 8 7
       1 5 0
     -------
           3 7 5
           3 7 5
         -------
               ×
```

3.
```
      8 7 . 7 5
            2 3
   ------------
     2 6 3 2 5
   1 7 5 5 0
 -------------
 2 0 1 8 . 2 5
```

4.
```
      .7
25)1 7.5
   1 7 5
   -----
       ×
```

5.
```
     1.3
57)7 4.1
   5 7
   ---
   1 7 1
   1 7 1
   -----
       ×
```

6.
```
       .5
14.55)7 2.7 5
      7 2 7 5
      -------
          ×
```

TRY IT

Match the following :

1. Column A	Column B
(a)	(iv)
(b)	(i)
(c)	(v)
(d)	(ii)
(e)	(iii)

MCQS

1. (d) 2. (b) 3. (a) 4. (a) 5. (c) 6. (b) 7. (c) 8. (c) 9. (b)

EXERCISE – 7.1

1. (a) $\frac{40}{75} = \frac{8}{15} = 8 : 15$

   (b) $\frac{500}{75} = \frac{20}{3} = 20 : 3$

   (c) $\frac{72}{800} = \frac{9}{100} = 9 : 100$

   (d) $\frac{8000}{560} = \frac{100}{7} = 100 : 7$

   (e) $\frac{3}{900} = \frac{1}{300} = 1 : 300$

   (f) $\frac{3 \times 60}{5 \times 60 + 20} = \frac{3}{25}$

   $= 3 : 25$

2. (a) $\frac{9000}{7500} = \frac{6}{5} = 6 : 5$

   (b) $\frac{3}{2} = 3 : 2$

   (c) $\frac{3}{1} = 3 : 1$

   (d) $\frac{30}{5} = \frac{6}{1} = 6 : 1$

3. (a) $\frac{5}{8}$ and $\frac{11}{15}$

   LCM of 8, 15 = 120

   $\frac{5 \times 15}{8 \times 15} = \frac{75}{120}$ and

$\frac{11 \times 8}{15 \times 8} = \frac{88}{120}$

$\therefore \frac{11}{15}$ is greater

(b) $\frac{12}{25}$ and $\frac{25}{48}$

LCM of 25, 48 = 1200

$\frac{12 \times 48}{25 \times 48} = \frac{576}{1200}$ and

$\frac{25 \times 25}{48 \times 25} = \frac{625}{1200}$

$\therefore \frac{25}{48}$ is greater.

4. $\frac{560}{600}$ and $\frac{450}{500}$

LCM of 600 and 500 = 3000

$\frac{560 \times 50}{600 \times 50} = \frac{2800}{3000}$ and

$\frac{450 \times 6}{500 \times 6} = \frac{2700}{3000}$

$\therefore \frac{560}{600}$ is greater.

5. Raima $\frac{3}{5}$ and Dhoni $\frac{2}{4}$

LCM of 5, 4 = 20

$\frac{3 \times 4}{5 \times 4} = \frac{12}{20}$ and

$\frac{2 \times 5}{4 \times 5} = \frac{2 \times 5}{4 \times 5} = \frac{10}{50}$

Raima $\frac{12}{20}$ is more successful.

6. Do it yourself.
7. Do it yourself.
8. Do it yourself.
9. Do it yourself.
10. Do it yourself.
11. Do it yourself.
12. Do it yourself.

13. (a) $\frac{9600}{7200} = \frac{4}{3} = 4 : 3$

(b) $\frac{2400}{9600} = \frac{1}{4} = 1 : 4$

14. 12500 – 2500 = 10000

(a) $\frac{2500}{10000} = \frac{1}{4} = 1 : 4$

(b) $\frac{2500}{12500} = \frac{1}{5} = 1 : 5$

(c) $\frac{12500}{10000} = \frac{5}{4} = 1 : 5$

15. P $\frac{7 \cdot 8}{4 \cdot 5}$ R

.3 × 7 = 2.1

.3 × 8 = 2.4

EXERCISE – 7.2

1. (a) : 9H (b) = ` 20 (c) : ` 125
2. (a) 2, 16, 5, 40

   (b) 5, 7, 35, 49

   (c) 24, 6, 48, 12

   (d) 3, 15, 15, 75

3. to 8. Do it yourself.
9. (a) 28.125 (b) 1 (c) 10 (d) 62.5
   (e) 42
10. Do it yourself.
11. Do it yourself.
12. Earning of a day = $\frac{420}{7}$ = ` 60

    $\therefore$ Earning of a day 30

    = 60 × 30 = ` 1800
13. Cost of a book = $\frac{205}{5}$ = 41

    $\therefore$ Earning of a day 15

    = 41 × 15 = 615

14. $5 : 2 :: 725 : x$

or $5x = 725 \times x$

$x = \frac{725 \times 9}{5} = 290$

15. $22 : 7 :: x : 42$

or $7x = 22 \times 42$

$x = \frac{22 \times 26}{7}$

$x = 132$

17. $150 : 3 :: x : 7$

or $3x = 7 \times 150$

$x = \frac{7 \times 150}{3}$

$x = 350$

EXERCISE – 7.3

1. $\because$ Weight of 6 packets = 2.400

$\therefore$ Weight of 1 packets

$= \frac{2.400}{6} = 400$ g

$\therefore$ Weight of 15 $= 400 \times 15$

$= 6000$ g

$= 6$ kg

2. $\because$ Weight of $2\frac{1}{2}$ kg = 25.40

$\therefore$ Weight of 1 kg

$= \frac{25.40 \times 2}{5 \times 100} = \frac{508}{500}$

$= 10.16$

$\therefore$ Weight of 1 kg

$= \frac{3}{2}$ kg $= 10.16 \times \frac{3}{2}$

= ` 17.40

3. $\because$ Cost of 3 kg = 150

$\therefore$ Cost of 1 kg $= \frac{150}{3} = 50$

$\therefore$ Cost of 10 kg $= 50 \times 10 \times 1500$

4. $\because$ Cost of 15 m = 2850

$\therefore$ Cost of 1 m $= \frac{2850}{15} = 190$

$\therefore$ Cost of 11 m $= 110 \times 11$

$= 12090$

5. $\because$ 14 mater tanks filled in $\frac{7}{2}$

$\therefore$ 1 water tanks filled in

$\frac{7}{2} = \frac{7}{2} \times \frac{1}{14} = \frac{1}{4}$

$\therefore$ 4 water tanks filled in

$= \frac{1}{4} \times 4 = 1$ hr

6. $\because$ 30 litre tank 300 of $\frac{3}{10} = 90$

$\therefore$ 1 litre tank 300 of $\frac{100}{300}$

$\therefore$ 90 litre tank $= \frac{100}{300} \times 90$

$= 300$ minutes

7. $\because$ In 5 hours = 354 m

$\therefore$ In 1 hours $= \frac{35}{5} = 7$

$\therefore$ 50 litre tank $= 7 \times 50$

$= 350$

8. (a) $\because \frac{5}{2} \times 60 = 150$ minute,

$\because$ In 150 minutes $= 3 \times 100$

$= 300$ m

$\therefore$ In 1 minutes $= \frac{300}{150} \times 2$ m

$\therefore$ In $\frac{5}{4}$ minutes $= 2 \times \frac{5}{4} = \frac{5}{2}$

$= 2\frac{1}{2}$ m

(b) $\because$ In 150 minutes = 300 m

$\therefore$ In 1 minutes $= \frac{300}{150} = 2$ m

$\therefore$ 9 minutes $= 9 \times 2 = 18$ m

9. (a) $\because$ Cost of 25 packets = 625

$\therefore$ Cost of 1 packets $= \frac{625}{25} = 25$

(b) $\because$ In 625 = 25 Packets

$\therefore$ In 1 = $\frac{25}{625}$

$\therefore$ In 725 = $\frac{25}{625} \times 725$

= 29 packets

10. $\because$ 28×10^3 cm = 1 sec

$\therefore$ 28×10^3 cm = $\frac{1}{28 \times 10^3}$

$\therefore$ $210 \times 10^6 = \frac{1}{28 \times 10^3}$

$\times 210 \times 10^6 = \frac{15 \times 10^6}{2 \times 10^3}$

$= \frac{15}{2} \times 10^{6-3}$

$= \frac{15}{2} \times 10^3$

$= \frac{15}{2} \times 10 \times 10 \times 10$

$= 15 \times 10^2$

11. 250 + 150 = 400

$\therefore$ For 250 men = 40 day

$\therefore$ For 1 men = 40×250

$\therefore$ 400 men = $\frac{40 \times 250}{400}$

= 25 days.

12. 550 + 150 = 400

$\therefore$ For 550 men = 72 days

$\therefore$ For 1 men = 72×550

$\therefore$ 400 men = $\frac{72 \times 550}{400}$

= 99 days.

13. (a) $\because$ For 350 quintal = 5

$\therefore$ For 1 men = $\frac{5}{350}$

$\therefore$ For 175 men = $\frac{5}{35} \times 175$

$= \frac{5}{2} \times 1000$

= 2500

(b) $\because$ For 5 hectare = 350

$\therefore$ $500 = \frac{350 \times 500}{5 \times 1000}$

$\therefore$ = 35

14. (a) $\because$ 15 men = 14 days

$\therefore$ For 1 men = 14×15

$\therefore$ 35 men = $\frac{14 \times 15}{355} \times 6$ day

(b) $\because$ 14 days = 15 men

$\therefore$ 1 day = 15×14

$\therefore$ 10 days = $\frac{15 \times 14}{10}$ = 21 men

EXERCISE – 8.1

1. (a) $50b$ (b) $\frac{18}{a}$ (c) $x - 9$ (d) $y - x$
   (e) $6a + 3b$ (f) $y - 3$ (g) $10 - 5x$
   (h) $3x - ab$
2. (a) x, y (b) $2a$, $3b$, $-c$ (c) $5abc^2$, $-2ab$, $7a^2c$ (d) $2ab$, $4ac^2$, $-6z$
3. Numerical factor : 25, Literal factors : a, b
4. Monomials : $3x$, xyz; Binomials : $(m + n)$, $(ab + 2c)$; Tronomials : $(x + 1 + z)$, $(2t + 3q + x)$
5. Like Terms : (a) 3a, 8a, – 6a
   (e) $-9z$, $15z$, $8z$ (f) $-4r$, $6r - 9r$
   Unlike Terms : (b) $6b$, $-4x$, $9m$
   (c) $5n$, $-6p$, $-6y$ (d) $-16x$, $-8y$, $-16x$, $-8y$, $-3a$
6. Both are algebraic expressions
7. (a) x^2, x^4, x^7, x^{11}, x^{13}
   (b) $2x$, $5x^2$, $3x^3$, $4x^4$, $7x^5$
8. (a) $a^2\,b^2$ (b) a^5 (c) x^4 (d) $(pq)^3$
   (e) $(mn)^4$
9. (a) $a \times a \times a \times a$
   (b) $p \times p \times p \times q \times q$
   (c) $pq \times pq \times pq$

EXERCISE – 8.2

1. (a) and (b) are not equations
2. Petrol = p, Diesel = d, $d = \frac{p}{2}$
3. (a) $3x + 8 = 17$ (b) $\frac{x}{5} - \frac{x}{10} = 3$
4. (a) $\frac{x}{4} = 7$ (b) $x + y = 25$
   (c) $\frac{1}{2}(x + y) = 8$ (d) $x^2 = 12 + x$
5. (a) $x + 7 = 21$ (b) $3x + 1 = 10$
   (c) $x + 7$
6. $(4x + 2y + 9)$ km
7. $(3b - 4)$m
8. $y^2 + 2x + 5$.

EXERCISE – 8.3

Do it yourself.

EXERCISE – 8.4

1. $\frac{x}{8} = 4$
   or $21 = 4 \times 8 = 32$
2. $\frac{x}{4} - 4 = 8$
   or $\frac{x}{4} = 8 + 4$
   or $x = \frac{12}{4} = 3$
3. $2x + 3x = 90$
   or $5x = 90$
   or $x = \frac{90}{5} = 18$
   $2x = 18 \times 2 = 36$
   $3x = 18 \times 3 = 54$
4. $6x - 10 = 32$
   or $6x = 32 + 10$
   $\therefore$ $x = 42$
   $\therefore$ $x = \frac{42}{6} = 7$
5. $\frac{x}{3} + 9 = 19$
   or $\frac{x}{3} = 19 - 9$
   or $\frac{x}{3} = 10$
   or $x = 10 \times 3 = 30$
6. $x + 4x + 4x = 180°$
   or $9x = 180°$
   $\therefore$ $x = \frac{180°}{9} = 20°$
   $x = 20°$
   $4x = 20 \times 4 = 80°$
   $4x = 20° \times 4 = 80°$

EXERCISE – 9.1

1. (a) False (b) True (c) True (d) False
   (e) False (f) False (g) True (h) False
   (i) True (j) False (k) True (l) True.
2. (a) A, B, C, D, E, F, G, H
   (b) 12, AB, BC, CD, DA, EF, FG, GH, HE, AE, DH, BF, CG
   (c) BF, EF, GF (d) AB, CB, FB
   (e) Do it yourself.
3. Do it yourself
4. A line has no beginning and no end point while a line segment has fix beginning and end points
5. A ray has only one end point while a line has no end point.
6. (a) $\overline{AP}$, $\overline{AQ}$, $\overline{AC}$, $\overline{AD}$ (b) 15, $\overline{PA}$, $\overline{PB}$, $\overline{PQ}$, $\overline{AB}$, $\overline{AQ}$, $\overline{AD}$, $\overline{AC}$, $\overline{BQ}$, $\overline{RD}$, $\overline{RC}$, $\overline{RS}$, $\overline{DC}$, $\overline{DS}$, $\overline{CS}$, BC
   (c) $\overline{PQ} \parallel \overline{RS}$ (d) $(\overline{AD}, \overline{BC})$; $(\overline{AD}, \overline{AC})$; $(\overline{AC}, \overline{BC})$ (e) $\overline{AD}$ and $\overline{AC}$ intersect at $\overline{A}$, $\overline{AC}$ and $\overline{BC}$ intersect at $\overline{C}$, $\overline{PQ}$ and $\overline{AD}$ intersect at $\overline{A}$, $\overline{PQ}$ and $\overline{BC}$ intersect at $\overline{B}$ and so on (f) $\overline{RS}$, $\overline{AC}$, $\overline{BC}$ (g) $\overline{PQ}$, $\overline{BC}$ (h) $\overline{PQ}$, $\overline{AC}$, $\overline{AD}$

7. (a) Infinite (b) Only one
8. (a) Yes (b) Yes
9. $PX = XQ = \frac{15}{2} = 7.5$ cm; $PY = YR = \frac{20}{2} = 10$ cm
10. Infinite
11. Do it yourself
12. (a) Tip of the pin, a bindi, tip of the ice-cream one. (b) Boundaries of a black boards, the edges of a table, greeting card etc. (c) Sunrays, light emitted by the torch, a projector (d) adjatent walls of a room, 1 sign of X, both arms of a scissor (e) Railway track, opposite sides of a rectangle, opposite sides of a ruler.

EXERCISE – 9.2

1. (a) , (c) (g) 2. Do it yourself
3. (i) open → (c), (e) (f), (h) (ii) closed → (a), (b), (d) g
4. (a), (d), (g) 5. Do it yourself.
6. Do it yourself. 7. Do it yourself.
8. Do it yourself. 9. Do it yourself.
10. (a) A polygon is a simple closed curve formed by more than two line segments.
    (b) A curve that ends at the starting point is called a closed curve
    (c) A polygon having three line segments is called a Triangle.
    (d) A polygon having four line segments is called a Quadrilateral

EXERCISE – 9.3

1. Clock hands, Scissor, Sides of a table.
2. Vertex is *O* and arms of the angle are *OL* and *ON*
3. (a) 3, $\angle A$, $\angle B$, $\angle C$ (b) 4, $\angle P$, $\angle Q$, $\angle R$, $\angle S$ (c) 12, $\angle HEG$, $\angle GEF$, $\angle HEF$, $\angle EFH$, $\angle HFG$, $\angle EFG$, $\angle FGE$, $\angle HGE$, $\angle FGH$, $\angle GHF$, $\angle FHE$, $\angle GHE$
4. (a) G, D, E, F, H
   (b) L, M, G, C, I, K
   (c) A, B, C, J, I
   (d) C, B, F, I, D, E
5. Yes 6. Do it yourself. 7. Yes
8. No.

EXERCISE – 9.4

1. (b) and (e) 2. Do it youself. 3. Do it youself. 4. (a) 3; ΔABD, ΔADC, ΔABC (b) 5; ΔPSU, ΔSUT, ΔURT, ΔSQT, ΔPQR (c) 8; ΔEOF, ΔFOG, ΔGOH, ΔHOE, ΔHEF, ΔGHF, ΔHEG, ΔGEF (d) 6; ΔABC, ΔABD, ΔABE, ΔACE, ΔACD, ΔADE
6. (a) *PQ*, *QS*, *SR*, *PS*, *PR*, *QR*
   (b) $\angle PQS$, $\angle PRQ$, $\angle QPS$, $\angle QPR$, $\angle SPR$, $\angle PSQ$, $\angle PSR$
7. ΔPQR, ΔPSR

EXERCISE – 9.5

1. Do it youself. 2. Do it youself.
3. A quadrilateral in which the measure of each angle is less than 180° is called a convex quadrilateral which in concave quadrilateral one of the angles is more than 180° but less than 360°.
4. (a) *K*, *L*, *M*
   (b) *X*, *W*, *Z*, *Y*
   (c) *A*, *B*, *C*, *D*, *R*, *Q*, *P*, *S*
   (d) K, L, M, A, B, C, D, R, Q, P, S
5. (a) Convex (b) Concave
   (c) Convex (d) Concave

6. No, as it not a simple closed figure/curve 7. Concave

EXERCISE – 9.6

1 to 6. Do it yourself.

5. (a) O (b) OA, OB, OC, OD
   (c) AB, CD (d) AD, BC, AB, DC
   (e) A, D, B, C, F, O, R, O, P
   (f) AOCF (g) AFC
7. (a) Yes (b) No (c) Yes (d) Yes
   (e) Yes
8. (a) Diameter = 2 × radius
   = 2 × 4 = 8 cm
   (b) Diameter = 2 × radius
   = 2 × 5 = 10 cm
   (c) Diameter = 2 × radius
   = 2 × 7.5 = 15 cm
   (d) Diameter = 2 × radius
   = 2 × 14.5 = 29 cm
9. (a) radius = $\frac{\text{Diameter}}{2} = \frac{6}{2} = 3$
   (b) radius = $\frac{\text{Diameter}}{2} = \frac{8}{2} = 4$
   (c) radius = $\frac{\text{Diameter}}{2} = \frac{18}{2}$
   = 9
   (d) radius = $\frac{\text{Diameter}}{2}$
   = $\frac{85}{2 \times 10} = \frac{85}{20}$
   = 4.25 cm

MCQS

1. (a) 2. (a) 3. (b) 4. (b) 5. (b) 6. (a) 7. (a) 8. (c) 9. (a)

EXERCISE – 10.1

Do yourself.

EXERCISE – 10.2

Do yourself.

EXERCISE – 10.3

Do yourself.

EXERCISE – 10.4

Do yourself.

EXERCISE – 10.5

Do yourself.

EXERCISE – 11

1.

Column A	Column B
(a)	(iv)
(b)	(v)
(c)	(i)
(d)	(ii)
(e)	(iii)

3. (a) 6, 12, 8 (b) 6, 12, 8
   (c) opposite (d) solid (e) curved
   (f) tetrahedon (g) sphere
   (h) 6, 9
4. Do it yourself.
5. Do it yourself.

MCQS

1. (b) 2. (d) 3. (c) 4. (a) 5. (c) 6. (c) 7. (a) 8. (a) 9. (b) 10. (c)

EXERCISE – 12.1

1. (a) 8 people (b) strawberry
   (c) 30 people
2.

Marks	Tally Marks	Frequency
1	||	2
2	|||	3
3	|||	3
4	|||| ||	7
5	|||| |	6
6	|||| ||	7

7	||||	5
8	||||	4
9	|||	3
	Total	40

(a) 12 students (b) 8 students

3.

Number	Tally Marks	Frequency
1	|||| ||	7
2	|||| ||	7
3	|||| |||	8
4	||||	5
5	|||| ||||	10
6	|||| |||	8
	Total	45

(i) 5 (ii) 4 (iii) 8 times

4.

Expenses (in `)	Tally Marks	Frequency
62	||	2
64	|||	3
66	|||	3
68	|||| |	2
70	||	6
72	||	2
74	||	2
76	||	2
78	|	1
80	||	2
	Total	25

(i) ` 70 (ii) ` 78 (iii) 15 students

5.

Marks	Tally Marks	Frequency
1	|	1
2	|||	3
3	||||	5
4	|||| |||	8
5	|||| |	6
6	||||	4
7	||	2
8	|	1
	Total	30

(a) 13 students (b) 23 students
(c) 4 marks

EXERCISE – 12.2

Do it yourself.

EXERCISE – 12.3

Do it yourself.

MCQS

1. (b) 2. (b) 3. (a) 4. (c) 5. (c) 6. (c) 7. (a) 8. (a) 9. (b)

EXERCISE – 13.1

1. Do it yourself.
2. Do it yourself.
3. (a) Perimeter of a square
   $= 4 \times \text{side}$
   $= 4 \times 24 = 96$
   (b) Perimeter of a square
   $= 4 \times \text{side}$
   $= 4 \times 35 = 140$ cm
   (c) Perimeter of a square
   $= 4 \times 1.25 = 5$ m
4. (a) Perimeter of rectangle
   $= 2(l + b)$
   $= 2 \times 52 = 104$ cm

(b) Perimeter of rectangle
$= 2(l + b)$
$= 2 \times (400 + 80)$
$= 2 \times 480$
$= 960$ cm

(c) Perimeter of rectangle
$= 2(l + b)$
$= 2 \times (10.25 + 5.75)$
$= 2 \times 16 = 32$ m

5. (a) Perimeter of rectangle
$=$ side + side + side
$= 4 + 3 + 6$
$= 13$ cm

(b) Perimeter of rectangle
$=$ side + side + side
$= 15 + 20 + 25$
$= 60$ cm

(c) Perimeter of rectangle
$=$ side + side + side
$= 15 + 20 + 25$
$= 60$ cm

(c) Perimeter of rectangle
$=$ side + side + side
$= 25 + 26 + 27$
$= 78$ cm

6. (a) Perimeter $= 2(6 + b)$
$= 2\ (32 + 45)$
$= 2 \times 77 = 154 \times 12$
$=$ ` 1848

7. Perimeter $=$ side + side + side
$75 = 20 + 30 + x$
or $75 = 50x$
or $50x = 75$
or $x = 75 - 50$
$\therefore \quad x = 25$

9. Area $= 4 +$ side
$= 4 + 30 = 1200 \times 15$
$=$ ` 18000

10. Square Area $= 4 + 90 = 360$ m
Rectangle Area $= 2(l + b)$
$= 2(120 + 180)$
$= 2 \times 200$
$= 400$
Meera by $400 - 360 = 40$ m

11. Perimeter $= 2(l + b)$
$= 2(620 + 440)$
$= 2 \times 1060$

$$\begin{array}{r} 2120 \\ \times 15 \\ \hline 10600 \\ 2120 \\ \hline ` 31800 \end{array}$$

12. Perimeter $= 2(l + b) = 2(l + b)$
$= 2(35 + 15)$
$= 2 \times 50 = 100$ m

Tole 1 rounds $= \frac{600}{100} = 6$ times

EXERCISE – 13.2

Do it yourself.

EXERCISE – 13.3

1. (a) 31.5 sq. cm (b) 8 sq. cm
(c) 0.5 sq. cm
2. (a) 12.25 sq. cm (b) 5 cm, 25 cm^2
(c) 4 cm, 16 cm
3. break $= \frac{\text{Area}}{\text{length}} = \frac{350}{20} = 5$ m
4. breath of square $= \frac{\text{Area}}{\text{length}}$
$= \frac{16}{4} = 4$ m
breath of square $= \frac{\text{Area}}{\text{length}}$
$= \frac{32}{4} = 8$
5. Area $=$ length $\times$ breadth
$= 400 \times 200 = 80000$ sqm
$80000 \times 12 =$ ` 960000
6. (a) Area $= l \times b = 20 \times 15$
$= 300$ cm

(b) Area = 22 × 22 = 484
Ans. (b)

7. Area = side × side = 6 × 6
= 36 × 150
= ` 5400

8. (a) Area = l × b = 20 × 6
= 60 m
(b) Area 2 l × b = 20 × 10
= 200 m
(c) Area 2 l × b = 15 × 10
= 150
(b) greatest (a) least

9. Area of Rectangular park
= l × b = 500 × 300
= 150000 sqm
Area of square bed
= side × side = 50 × 50
= 2500
= 2500 × 5 = 12500
150000 – 12500 = 137500

10. Area = side × side = 20 × 20
= 400 cm ÷ 100 = 4 m
Area square = side × side
= 3 × 3 = 9 m
no. of files = $\frac{9}{3}$ = 3 Ans.

MCQS

1. (a) 2. (c) 3. (b) 4. (b) 5. (c) 6. (b)

EXERCISE – 14

1. (a) Symmetrical
(b) Non-symmetrical
(c) Non-symmetrical
(d) Symmetrical
2. Do it yourself.
3. (a) Isosceles Triangle
(b) Equilateral triangle
(c) Scalene triangle
4. *A, B, C, D, E, K, M, T, U, V, W, Y*
5. *H, I, O, X*
6. F, G, J, L, N, P, Q, R, S, Z
7. No
8. Kite, Butterfly, Taj Mahal, India Gate
9. (a) Infinite (b) Two (c) Two (d) Four (e) No (f) One
10. (a) False (b) True (c) True (d) False (e) True (f) False

MCQS

1. (c) 2. (a) 3. (d) 4. (a) 5. (b) 6. (c) 7. (d) 8. (b) 9. (d) 10. (c)

MY FIRST MATHEMATICS-7

EXERCISE–1.1

1. (a) + 5000
(b) – 10 yards
(c) + hours
(d) – 5 mins
(f) + 14°C
2. (a) 13 (b) + 23 (c) 8 (d) – 13
3. (a) – 27, – 8, – 5, 4, 8, 16
(b) – 16, – 9, – 3, – 1, 0, 3
(c) – 21, – 18, – 10, 1, 7, 14
4. (a) 20, 9, 0, – 1, – 5, – 21
(b) 25, 15, 1, – 3, – 7, – 25
(c) 8, 4, 3, – 9, – 11, – 16
5. (a) = + 3 – 4 = – 1
(b) = – 8 – 15 = – 23
(c) = – 9 + 17 = 8
(d) = + 11 – 14 = – 3
(e) = – 19 + 7 = – 12
(f) = – 25 – 27 = – 52

6. (a) 2°C (b) + 10°C (c) – 2°C
(d) + 8°C

EXERCISE–1.2

1. (a) – 72 (b) 112 (c) – 729 (e) 0
2. (a) 5348600 (c) – 725000
(d) 134600 (b) 54600 (e) – 160
3. (a) – ve (b) – ve (c) + ve
(d) – ve (e) + ve
4. (a) < (b) < (c) < (d) = (e) >
(f) =
5. (a) – 8 (b) 0 (c) – 24 (d) 64

EXERCISE–1.3

1. (a) – 4 (b) – 4 (c) 4 (d) 0 (e) 100
(f) – 100 (g) – 100 (h) – 601
2. (a) 3 (b) 1 (c) 0 (d) – 10 (e) – 6
(f) – 5
3. (a) T (b) F, is 0 (c) T (d) T
(e) F, undefined (f) F, – 2 (g) T
(h) T

EXERCISE–1.4

1. (a) $-49 \div 7$ or $-49 \div -7$
$= -7$ or 7
$\therefore -49 \div 7 < -49 \div -7$
(b) $7 + 6 \times (-4)$ or $-8 + (-2) \times (-8) (-1)$
$= 7 - 24 \qquad = -8 - 16$
$= -17$ greater $= -24$
(c) $(-4) \times (-22) \times 4 \times (-3)$
$= (+88) \times (-12)$
$= -950$
or
$(-2) \times (-1) \times (-1) \times 2$
$= -2 \times 2$
$= -4$ greater
2. (a) $18 \times (-6 + 4) \div 9$
$= 18 \times (-2) \div 9$
$= 18 \times -2 \times \frac{1}{4} = -4$ Ans.
(b) $-3 \times \{(-4) \div 4 + 1\} + 3$
$= -3 + \{-1 + 1\} + 3$
$= -3 + 0 + 3 = 6$ Ans.
(c) $10 + 4 - [3 - \{1 + 2 - (4 - 9)\}]$
$= 10 + 4 - [3 - \{1 + 2 - (-5)\}]$
$= 10 + 4 - [3 - \{1 + 2 + 5\}]$
$= 10 + 4 - [3 - 8]$
$= 10 + 4 - [-5]$
$= 10 + 4 + 5 = 19$ Ans.
(d) $140 - 12 \times [3 - 4\{2 \times 3 - 2 \times (-8)\}]$
$= 140 - 12 \times [3 - 4\{2 \times 3 + 16\}]$
$= 140 - 12 \times [3 - 4\{6 + 16\}]$
$= 140 - 12 \times [3 - 4 \times 22]$
$= 140 - 12 \times [3 - 88]$
$= 140 - 12 \times [-85]$
$= 140 + 1020 = 1160$ Ans.
(e) $-5 - (-48) \div (12) + (-2) \times 6$
$= -5 - (-4) + (-12)$
$= -5 + 4 - 12 = -13$ Ans.
(f) $[-15 + \{4 \div (-1) - (3)\} \times 6]$
$= [-15 + \{4 \div 4\} \times 6]$
$= [-15 + 1 \times 6]$
$= -15 + 6 = -9$ Ans.
(g) $\frac{-40 + \overline{(-1) - (2)} \times 6 \div}{3 - 2}$
$= -40 + 2 \times 6 \div 1$
$= -40 + 2 \times 6 = -40 + 12$
$= -28$ Ans.
(h) $\{60 \times (-3)\} \div 45 \div (-2)$
$= -60 \div 40 \div 2$
$= -60 \times \frac{1}{4} \times \frac{1}{2}$
$= -\frac{3}{4}$ Ans.

(i) $7 + 4 - [3 - \{1 + 2 - (4 - 9)\}]$
$= 7 + 4 - [3 - \{1 + 2 - (-5)\}$
$= 7 + 4 - [3 - \{1 + 2 + 5\}]$
$= 7 + 4 - [3 - 8] = 7 + 4 - [-5]$
$= 7 + 4 + 9 = 20$ Ans.

(j) $-4 \times -1[2 \times (-6) + 3 (2 \times 6 - 4 - 2)]$
$= -4 \times -[2 \times (-6) + 3 (12 - 6)]$
$= -4 \times -1[2 \times (-6) + 3(6)]$
$= -4 \times -1[-12 + 18]$
$= -4 \times -1 \times 6 = 24$ Ans.

(k) $120 - 12[3 - 4\{2 \times 3 - 2 \times (-8)\}]$
$= 120 - 12[3 - 4\{2 \times 3 + 1\}]$
$= 120 - 12[3 - 4\{6 \times 16\}]$
$= 120 - 12[3 - 4 \times 96]$
$= 120 - 12[3 - 384]$
$= 120 - 12 \times 381$
$= 120 - 4571 = 4451$ Ans.

(l) $-80 + 6 \times [-\overline{3 \times 8} + 20] + 110$
$= -80 + 6 \times [-24 + 20] + 100$
$= -80 + 6 \times (-4) + 100$
$= -80 - 24 + 100$
$= -104 + 100 = -4$ Ans.

(m) $-4 \times (-2)[2 \times (-6) + 3 \times (\overline{2 \times 6} - 4.4)$
$= -4 \times (-2)[-12 + 3 \times [12 - 8]$
$= -4 \times (-27)[-12 + 3 \times 4]$
$= -4 \times (-2)[-12 + 12]$
$= -4 + (-2) \times 0 = 0$ Ans.

MCQS

1. (a) 2. (c) 3. (c) 4. (c) 5. (b) 6. (b) 7. (b) 8. (a) 9. (c) 10. (b) 11. (c) 12. (b) 13. (d)

MENTAL MATHS

I. 1. 1 2. – 7 km 3. 0 4. 0

II. 1. T 2. F 3. T 4. T 5. F

EXERCISE–2.1

1. (a) $\frac{6}{10}, \frac{9}{24}, \frac{12}{32}, \frac{15}{40}$

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

(c) $\frac{8}{14}, \frac{12}{21}, \frac{16}{28}, \frac{20}{35}$

(d) $\frac{10}{6}, \frac{15}{9}, \frac{20}{12}, \frac{25}{15}$

2. (a) $\frac{3}{11} + \frac{5}{6} + 1\frac{1}{3}$
$= \frac{3}{11} + \frac{5}{6} + \frac{4}{3}$
$= \frac{18 + 55 + 88}{66}$
$= \frac{161}{66} = 2\frac{29}{66}$

(b) $\frac{5}{3} + \frac{13}{5} + \frac{31}{15}$
$= \frac{5}{3} + \frac{13}{5} + \frac{31}{15}$
$= \frac{25 + 39 + 31}{15}$
$= \frac{95}{15} = \frac{19}{3} = 6\frac{1}{3}$

(c) $8\frac{3}{4} + 10\frac{2}{5}$
$= \frac{35}{4} + \frac{52}{5}$
$= \frac{275 + 208}{20}$
$= \frac{483}{20} = 28\frac{3}{20}$

(d) $3\frac{4}{5} + 2\frac{3}{10} + 1\frac{1}{15}$

$= \frac{19}{5} + \frac{23}{10} + \frac{16}{15}$

$= \frac{114 + 69 + 32}{30}$

$= \frac{815}{30} = 27\frac{5}{306}$

$= 27\frac{1}{6}$

3. (a) $2\frac{2}{3} - \frac{1}{4}$

$= \frac{8}{3} - \frac{1}{4}$

$= \frac{32 - 9}{12}$

$= \frac{21}{12} = \frac{7}{9}$

$= 1\frac{3}{4}$

(b) $\frac{15}{8} - \frac{3}{7}$

$= \frac{105 - 24}{56}$

$= \frac{81}{56} = 1\frac{25}{56}$

(d) $2\frac{5}{9} - 1\frac{7}{15}$

$= \frac{23}{9} - \frac{22}{15}$

$= \frac{115 - 66}{45}$

$= \frac{49}{45} = 1\frac{4}{45}$

4. (a) $\frac{5}{7} - \frac{7}{12} + \frac{1}{2}$

$= \frac{60 - 84 + 42}{84}$

$= \frac{102 - 84}{84} = \frac{18}{84}$

$= \frac{3}{14}$

(b) $8 - 4\frac{1}{2} - 2\frac{1}{4}$

$= 8 - \frac{9}{2} - \frac{9}{4}$

$= \frac{32 - 18}{4}$

$= \frac{32 - 27}{4}$

$= \frac{5}{4} - 1\frac{1}{4}$

(c) $8\frac{5}{6} - 3\frac{3}{8} + 1\frac{7}{72}$

$= \frac{61}{6} - \frac{27}{8} + \frac{19}{12}$

$= \frac{244 - 81 + 38}{4}$

$= \frac{282 - 81}{24}$

$= \frac{201}{24} = \frac{67}{8} = 8\frac{3}{8}$

5. $8\frac{2}{5} - 7\frac{4}{5}$

$= \frac{42}{5} - \frac{39}{5}$

$= \frac{42 - 39}{5}$

$= \frac{3}{5}$

6. $18 - 7\frac{3}{5}$

$= 18 - \frac{38}{5}$

$= \frac{90 - 38}{5}$

$= \frac{52}{5} = 10\frac{2}{5}$

7. $5\frac{2}{3} - 2\frac{4}{5}$

$= \frac{17}{3} - \frac{14}{5}$

$= \frac{85 - 42}{15}$

$= \frac{43}{15} = 2\frac{13}{15}$

8. $22\frac{1}{3} - 6\frac{1}{4}$

$= \frac{67}{3} + \frac{25}{4}$

$= \frac{148 - 75}{12}$

$= \frac{223}{12} = 18\frac{7}{12}$

EXERCISE–2.2

1. (a) $18 \times \frac{7}{3} = 42$ m

(b) $3600 \times \frac{5}{3} = 6000$ m

(c) $250 \times \frac{16}{5} = 800$

(d) $29 \times \frac{3}{4} = 18$

(e) $\frac{1}{5} \times \frac{18}{5} = \frac{18}{25}$

(f) $\frac{1}{2} \times \frac{19}{2} = \frac{19}{4}$

(g) $2 \times \frac{4}{5} = \frac{8}{5} \times 100$

(h) $\frac{15}{4} \times \frac{2}{5} = \frac{3}{2} = 1\frac{1}{2}$ kg

2. (a) $2\frac{2}{3} \times 3\frac{3}{4}$

$= \frac{5}{3} \times \frac{15}{4}$

$= 10$

(b) $1\frac{1}{2} \times 1\frac{1}{3} \times 1\frac{1}{4}$

$= \frac{3}{2} \times \frac{4}{3} \times \frac{5}{4}$

$= \frac{5}{2} = 2\frac{1}{2}$

(c) $3\frac{1}{3} \times 2\frac{2}{5} \times 1\frac{1}{7}$

$= \frac{10}{3} \times \frac{12}{5} \times \frac{8}{7}$

$= \frac{64}{5} = 9\frac{1}{7}$

(d) $22\frac{2}{3} \times 3\frac{1}{7}$

$= \frac{68}{3} \times \frac{22}{7} = \frac{1496}{21}$

(e) $3\frac{1}{2} \times 2\frac{1}{5} \times \frac{25}{35}$

$= \frac{7}{2} \times \frac{11}{5} \times \frac{25}{35}$

$= \frac{11}{2} = 5\frac{1}{2}$

(f) $\frac{325}{8} \times \frac{12}{5}$

$= \frac{195}{2} = 97\frac{1}{2}$

(g) $\frac{35}{6} \times \frac{15}{7}$

$= \frac{25}{2} = 12\frac{1}{2}$

(h) $\frac{56}{5} \times \frac{27}{8}$

$= 63$

3. (a) $\frac{2}{3} \times [\frac{3}{4} + \frac{2}{3} + \frac{5}{2}]$

$= \frac{2}{3} \times [\frac{9 + 8 + 30}{12}]$

$= \frac{2}{3} \times \frac{42}{12}$

$= \frac{7}{3} = 2\frac{1}{3}$

(b) $[\frac{7}{9} - \frac{5}{27}] \times [\frac{1}{3} - \frac{5}{78}]$

$= [\frac{21 - 5}{27} \times [\frac{6 - 5}{18}]$

$= \frac{16}{27} \times \frac{1}{18} = \frac{8}{3}$

(c) $(11\frac{1}{4} \times 3\frac{1}{5}) + (4\frac{2}{3} \times 5\frac{6}{7})$

$= (\frac{45}{4} \times \frac{16}{5}) + [\frac{14}{3} \times \frac{41}{7}]$

$= 36 + \frac{82}{30}$

$= \frac{108 + 82}{3} = \frac{19}{3}$

$= 63\frac{1}{3}$

(d) $(\frac{4}{5} \times \frac{25}{8}) - (\frac{4}{3} \times \frac{9}{8})$

$= 9 - \frac{3}{2} = \frac{18 - 3}{2} = \frac{15}{2}$

$= 7\frac{1}{2}$

(e) $(\frac{13}{4} \times \frac{12}{30}) - (\frac{14 - 9}{21})$

$= 1 - \frac{5}{4} = \frac{21-5}{21} = \frac{16}{21}$

(f) $(\frac{6+5}{22}) \times (\frac{28+15}{18})$

$= \frac{11}{22} = \frac{33}{18} = \frac{11}{16}$

4. (a) $\frac{22}{3} \times \frac{3}{22} = 1$

(b) $5 \times \frac{1}{5} = 1$

(c) $\frac{2}{13} \times \frac{13}{2} = 1$

(d) $5\frac{2}{3} \times \frac{3}{17} = 1$

(e) $\frac{9}{25} \times 2\frac{7}{9} = 1$

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

5. (a) $\frac{1}{71}$ (b) $\frac{1}{24}$ (c) $\frac{12}{5}$ (d) $\frac{14}{1}$

(e) $\frac{7}{3}$ (f) $\frac{23}{18}$ (g) $\frac{39}{7} = \frac{7}{39}$

(h) $= \frac{42}{11} = \frac{11}{92}$

EXERCISE–2.3

1. $5 \times \frac{11}{2} = \frac{55}{2}$ m
2. $6 \times \frac{5}{9} = \frac{10}{3}$
3. $= \frac{5}{8} \times \frac{1}{3}$

   $= \frac{5}{24}$
4. $= \frac{6}{11} \times \frac{1}{15}$

   $= \frac{8}{505}$
5. $= \frac{34}{5} \times \frac{35}{7}$

   $= 34$
6. $= \frac{16}{7} \times \frac{42}{28}$

   $= \frac{24}{7}$
7. $= \frac{8}{27} \times \frac{9}{16}$

   $= \frac{1}{6}$
8. $= \frac{9}{35} \times \frac{7}{1}$

   $= \frac{9}{3}$
9. $= \frac{145}{4} \div \frac{35}{4} = \frac{145}{4} \times \frac{4}{35}$

   $= \frac{29}{7}$
10. $(\frac{21}{4} \times \frac{164}{7}) \div \frac{2}{3}$

    $= 12 \div \frac{2}{3} = 12 \times \frac{3}{2} = 18$
11. $(\frac{164}{9} \div \frac{82}{9}) \div \frac{4}{3}$

    $= \frac{169}{9} \times \frac{9}{80} = 2 \div \frac{4}{3}$

    $= 2 \times \frac{3}{5} = \frac{3}{2}$
12. $(\frac{15}{7} \times \frac{14}{5}) \div \frac{1}{10}$

    $= 6 \div \frac{1}{10} = 6 \times \frac{10}{1} = 60$
13. $(\frac{2}{7} \times \frac{21}{40}) \times (\frac{3}{10} \times \frac{20}{93})$

    $= \frac{3}{80} \times \frac{2}{3} = \frac{1}{10}$
14. $\frac{2}{35} \times \frac{9}{2}$

    $= \frac{9}{35}$
15. $(24 \div \frac{8}{3}) \div \frac{28}{9}$

    $= (24 \times \frac{3}{8}) \div \frac{28}{9}$

    $= 9 \div \frac{28}{9} = 9 \times \frac{9}{28}$

EXERCISE–2.4

1. Area $= 2\ (l + b)$

   $= 2(25\frac{3}{5} + 9\frac{1}{4})$

$= 2(\frac{128}{5} + \frac{37}{4})$

$= 2(\frac{12 + 185}{20}) = 2 \times \frac{697}{2010}$

$= 69\frac{7}{10}$ m

2. $25\frac{3}{4} + 2\frac{2}{3} = \frac{103}{4} \times \frac{8}{3} = \frac{206}{3}$

$= 68\frac{2}{3}$

3. 50 of $\frac{3}{5}$ = 30 girl, so 50 – 30

= 20 boys

4. $6\frac{3}{4} \times 8 = \frac{27}{4} \times 8 = 54$ m

5. Perimeter = 2(l + b)

$= 2[16\frac{1}{2} + 12\frac{3}{4}] = 2(\frac{33}{2} + \frac{51}{4})$

$= 2[\frac{66 + 102}{4}]$

$= 2 \times \frac{168}{4} = 84$ m

6. Area = 2(*l* + *b*)

$= 2[36\frac{2}{5} + 16\frac{2}{3}] = 2(\frac{82}{5} + \frac{50}{3})$

$= 2[\frac{546 + 250}{15}] = \frac{2 + 796}{15}$

$= \frac{1592}{15} = 106\frac{2}{5}$

7. $\frac{4}{9} \div \frac{7}{17} = \frac{4}{9} \div \frac{17}{7} = \frac{68}{63} = 1\frac{5}{63}$

8. $194\frac{1}{4} \div 8\frac{1}{4} = \frac{777}{4} \div \frac{33}{4}$

$= \frac{777}{4} \times \frac{4}{33} = \frac{259}{11} \times 3\frac{3}{4}$

$= \frac{259}{11} \times \frac{15}{4} = \frac{1295}{44} = 29\frac{19}{44}$

9. $28\frac{1}{4} \div 2\frac{1}{4} = \frac{113}{4} \div \frac{9}{4}$

$= \frac{113}{4} \times \frac{4}{9} = \frac{113}{9} = 12\frac{5}{9}$

10. $245\frac{1}{8} \div 18\frac{1}{2} = \frac{1961}{8} \div \frac{37}{2}$

$= \frac{1961}{8} \times \frac{2}{37} = \frac{53}{4} \times \frac{53}{2}$

$= \frac{1809}{8} = 226\frac{1}{8}$

11. $30\frac{3}{8} \div 2\frac{1}{40} = \frac{243}{8} \div \frac{81}{4}$

$= \frac{243}{8} \times \frac{4}{81} = \frac{3}{2} = 1\frac{1}{2}$

12. Perimeter = side × side

$= 9\frac{1}{11} \times 9\frac{1}{11} = \frac{100}{11} \times \frac{100}{11}$

$= \frac{1000}{121}$

13. $\frac{1 - 4}{7} = \frac{7 - 4}{7} = \frac{3}{7} \times 210$

= 90 boys

14. Other No.

$= \frac{\text{Product of two numbers}}{\text{one number}}$

$= \frac{15\frac{5}{6}}{6\frac{1}{3}} = \frac{95}{6} \div \frac{19}{3}$

$= \frac{35}{6} \div \frac{3}{19} = \frac{5}{2} = \frac{21}{2}$

15. $42 \div 9\frac{4}{5} = 42 \div \frac{49}{5}$

$= 42 \times \frac{5}{49} = \frac{30}{7} = 4\frac{2}{7}$

MCQS

1. (a) 2. (d) 3. (d) 4. (b) 5. (c) 6. (d) 7. (a) 8. (c) 9. (a)

EXERCISE–3.1

1. (a) $\frac{-45}{51}$ (b) $\frac{-12}{19}$ (c) $\frac{68}{117}$
2. (a) $\frac{3}{18}$ (b) $\frac{-20}{-120}$ (c) $\frac{-40}{-240}$ (d) $\frac{100}{600}$

3. (a) $\frac{-15}{-27}$ (b) $\frac{30}{54}$ (c) $\frac{60}{108}$
   (c) $\frac{5000}{9000}$
4. (a) $\frac{-9}{17}$ (b) $\frac{9}{11}$ (c) $\frac{-39}{55}$
   (c) $\frac{2}{5}$
5. (a) $\frac{21}{18}, \frac{5}{18}$ (b) $\frac{18}{24}, \frac{5}{24}$
   (c) $\frac{48}{80}, \frac{68}{80}, \frac{42}{80}, \frac{55}{80}$
   (d) $\frac{48}{168}, \frac{273}{168}, \frac{108}{168}, \frac{136}{168}$
6. (a) $\frac{-5}{25}$ (b) $\frac{-1}{5}$ (c) $\frac{125}{-625}$ (d) $\frac{25}{-125}$
7. (a) $\frac{63}{-98}$ (b) $\frac{-9}{14}$ (c) $\frac{-126}{196}$
   (d) $\frac{12600}{-19600}$
8. (a) $\frac{-8}{18}, \frac{-12}{27}, \frac{-16}{36}, \frac{-20}{45}, \frac{-24}{18}$
   (d) $\frac{-14}{6}, \frac{-21}{9}, \frac{-28}{12}, \frac{-35}{15}, \frac{-42}{18}$

EXERCISE–3.2

1. (a), (b), (c)
2. (a) $\frac{3}{29}$ (b) 0 (c) $\frac{15}{7}$ (d) $4\frac{7}{5}$
   (e) $\frac{-7}{12}$ (f) $\frac{-5}{6}$
3. (a) $\frac{-8}{3} < \frac{-8}{9} < \frac{-8}{11}$
   (b) $\frac{-9}{10} < \frac{-11}{30} < \frac{2}{-15} < 0$
4. (a) $0 > \frac{-1}{6} > -2 > \frac{7}{-3}$
   (b) $\frac{-1}{10} > \frac{17}{-20} > \frac{2}{-15} > 0$
5. (a)
   (b)
   (c)
   (d)
   (e)
   (f)
   (g)
   (h)
   (i)
   (j)
6. (a) – 64 (b) – 3 (c) – 54 (d) – 30
   (e) – 20 (f) – 28
7. (a) $\frac{6}{7}$ (b) $\frac{5}{11}$ (c) $\frac{16}{23}$ (d) $\frac{5}{7}$
8. (a) $\frac{-14}{5}, \frac{-13}{5}, \frac{-12}{5}, \frac{-11}{5}$
   (b) $\frac{-6}{15}, \frac{-7}{15}, \frac{-8}{15}, \frac{-9}{15}$
   (c) $\frac{17}{96}, \frac{18}{96}, \frac{19}{96}, \frac{20}{96}$
9. (a) True, from definition of standard form,
   (b) False, since the denominator $q = 0$. (c) True,
   (d) False, lowest forms of the two are not equal.
   (e) True, because it has numerator and denominator.
   (f) True, from definition of standard form.
   (g) False, since is positive, it lies on right hand side of zero on the number line.
   (h) True

EXERCISE–3.3

1. (a) $\frac{-7}{9} + \frac{95}{9} = 2$
   (b) $\frac{-7}{9} + \frac{95}{9} = 2$

(c) $\frac{-13}{1} + \frac{-5}{18} = -1$

2. (a) $\frac{7}{-15} + \frac{4}{15} = \frac{7+4}{-15} = \frac{11}{-15}$

(b) $\frac{-3}{19} + \frac{-9}{-19} = \frac{(-3)+(-9)}{19}$

$= \frac{+15}{135}$

(c) $\frac{-23}{35} + \frac{8}{-35} = \frac{-23+8}{-35}$

$= \frac{+15}{135}$

3. (a) $\frac{6}{7} - \frac{-2}{3} = \frac{18-(-14)}{21}$

$= \frac{18+14}{21} = \frac{32}{21}$

(b) $8\frac{-1}{11} + \frac{3}{-11} = \frac{(-1)+(-3)}{11}$

$= \frac{-1+3}{11} = \frac{2}{11}$

(c) $\frac{3}{-7} = \frac{4}{7} = \frac{-3+(-4)}{7}$

$= \frac{-3+4}{7} = \frac{1}{7}$

4. (a) $\frac{2}{-5} - \frac{3}{15} - \frac{7}{10}$

$= \frac{-12+6-21}{30}$

$= \frac{33+6}{30} = \frac{-27}{30}$

(b) $\frac{6}{11} + (\frac{-2}{33}) + (\frac{-5}{44}) + 0$

$= \frac{6}{71} + \frac{2}{33}\ \frac{-5}{44}$

$= \frac{72+8-15}{132}$

$= \frac{80+15}{132} = \frac{65}{132}$

(c) $\frac{8}{21} - \frac{-15}{-19} - \frac{3}{21}$

$= \frac{152+315-57}{-399}$

$= \frac{152-372}{-399} = \frac{+220}{7399}$

5. $\frac{-1}{6} - (-4) = \frac{-1(-24)}{6}$

$= \frac{-1+24}{6} = \frac{23}{6} = 3\frac{5}{6}$

6. $-35(\frac{4}{3}) = \frac{-105-4}{3} = \frac{-109}{3}$

$= -36\frac{1}{3}$

7. $1 - (\frac{-8}{9}) = \frac{9+8}{9} = \frac{17}{9}$

$= 1\frac{8}{9}$

8. $0 - (\frac{-119}{15}) = \frac{+119}{7} = \frac{119}{7}$

9. $\frac{-5}{6} - (\frac{-3}{14}) = \frac{-35+9}{42} = \frac{26}{42}$

10. $2\frac{3}{7} + -5\frac{4}{4} = \frac{17}{7} + (\frac{-24}{4})$

$= \frac{68-168}{28} = \frac{-100}{28}$

$\frac{4}{15} - \frac{(-2)}{5} = \frac{4+6}{15} = \frac{10}{15}$

$\frac{10}{15} - (\frac{-100}{28}) = \frac{280+1500}{420}$

$= \frac{1780}{420}$

EXERCISE–3.4

1. (a) $\frac{-4}{21} \div \frac{-2}{3} = \frac{2}{7}$

(b) $\frac{7}{8} \div \frac{-7}{8} = -1$

(c) $\partial \div \frac{-19}{30} = 0$

(d) $-18 \div 21 = \frac{-6}{7}$

2. (a) $(\frac{36}{11} \times \frac{88}{18}) + (\frac{-26}{14} \times \frac{-28}{13})$

$16 + 4 = 20$

(b) $(\frac{-16}{17} \times \frac{-65}{64}) - (\frac{-8}{45} \times \frac{9}{24})$

$= \frac{-65}{68} - (\frac{-1}{15})$

$= \frac{975+68}{1020} = \frac{1043}{1020}$

(c) $(\frac{-9}{4} \times \frac{2}{3}) + (\frac{1}{2} \times 0)$

$- (\frac{8}{-6} \times \frac{18}{15})$

$= \frac{-3}{2} + 0 - 1$

$= \frac{-3+0-2}{2} = \frac{-5}{2}$

3. (a) $-6 \div \frac{12}{5} = -6 \times \frac{5}{12}$

$= -\frac{5}{2}$

(b) $\frac{7}{-8} \div (-14) = \frac{7}{-8} \times \frac{1}{-4}$

$= \frac{1}{2}$

(c) $\frac{9}{13} \div \frac{-27}{78} = \frac{9}{7} \times \frac{78}{-27}$

$= -2$

(d) $\frac{-19}{23} \div \frac{1}{3} = \frac{-19}{23} \times \frac{3}{1}$

$= \frac{57}{23}$

4. number itself.

(d) $\frac{-19}{23} \div \frac{1}{3} = \frac{-19}{23} \times \frac{3}{1}$

5. $\frac{2}{5} + \frac{3}{4} = \frac{8+15}{20} \times \frac{23}{20}$

$\frac{2}{5} - \frac{3}{4} = \frac{8-15}{20} = \frac{-7}{20}$

$\frac{23}{20} \div \frac{-7}{20} = \frac{23}{20} \times \frac{20}{-7}$

$= \frac{23}{-7} =$

6. $\frac{16}{5} \times \frac{-11}{3} = \frac{48+(-55)}{15}$

$= \frac{48-55}{15} = \frac{-7}{15}$

$\frac{12}{19} = \frac{38}{-15} = \frac{4}{15}$

$\frac{-7}{15} \div \frac{4}{15} = \frac{-7}{15} \times \frac{15}{4} = \frac{-7}{4}$

7. Other No. $= \frac{-65}{14} \div \frac{13}{21}$

$= \frac{-65}{14} \times \frac{21}{13} = \frac{-15}{2} = -7\frac{1}{2}$

8. $\frac{-7}{44} \div 0 = 0$

9. $50\frac{2}{5} \div 3\frac{1}{2} = \frac{252}{5} \div \frac{7}{2}$

$= \frac{252}{5} \times \frac{2}{7} = \frac{72}{5}$

10. $\frac{-12}{5} \times \frac{-65}{7} = \frac{156}{7}$

11. $\frac{28}{119} \times \frac{-98}{17} = \frac{28}{119} \times \frac{17}{98}$

$= \frac{2}{49}$

12. $85\frac{1}{3} \div 24$

$256 \times \frac{1}{24} = \frac{32}{3}$

13. (a) $\frac{-15}{31} \times \frac{622}{18} = \frac{-5}{3}$

(b) $\frac{-32}{15} \times \frac{5}{16} = \frac{-2}{3}$

(c) $\frac{23}{7} \times \frac{5}{6} = \frac{23}{7}$

(d) $\frac{22}{9} \times \frac{13}{5} = \frac{86}{45}$

MCQS

1. (c) 2. (b) 3. (a) 4. (b) 5. (a) 6. (a) 7. (b) 8. (c)

EXERCISE–4.1

1. (a) 7.500, 64.230, 0.074
   (b) 0.600, 5.937, 2.360, 4.200
2. (a) $6.05 < 6.4 < 6.45 < 6.5 < 6.54 <$
   (b) $0.33 < 3.003 < 3.033 < 3.3 < 3.303$
3. (a) $73.03 > 8.73 > 8.073 > 7.33 > 7.3$
   (b) $88.8 > 88.08 > 8.088 > 8.008$
4. (a) $\frac{3}{5}$ (b) $\frac{2}{25}$ (c) $\frac{28}{125}$
5. (a) $6\frac{2}{5}$ (b) $16\frac{1}{2}$ (c) $8\frac{9}{25}$
6. (a) 2.3 (b) 1.67 (c) 15.89

7. (a)
$$\begin{array}{r} 19.267 \\ +\ 31.010 \\ +\ 0.002 \\ \hline 50.279 \end{array}$$

(b)
$$\begin{array}{r} 38.01 \\ -\ 0.07 \\ \hline 37.940 \\ 11.651 \\ \hline 49.591 \end{array}$$

(c)
$$\begin{array}{r} 11.650 \\ 0.001 \\ \hline 11.651 \end{array}$$

(b)
$$\begin{array}{r} 38.01 \\ -\ 0.07 \\ \hline 37.940 \\ 11.651 \\ \hline 49.591 \end{array}$$

(c)
$$\begin{array}{r} 32.06 \\ -\ 0.70 \\ \hline 31.70 \\ +\ 4.396 \\ \hline 35.756 \end{array}$$

(d)
$$\begin{array}{r} 15.25 \\ +\ 11.34 \\ \hline 26.59 \\ 26.590 \\ -\ 7.865 \\ \hline 18.725 \end{array} \qquad \begin{array}{r} 7.860 \\ +\ 0.005 \\ \hline 7.865 \end{array}$$

8. Mrs. Bharti
$$\begin{array}{r} 51.50\ \text{kg} \\ 25.65\ \text{kg} \\ 4.25\ \text{kg} \\ \hline 81.40\ \text{kg} \end{array}$$

Mrs. Bharti
$$\begin{array}{r} 65.20\ \text{kg} \\ +\ 19.65\ \text{kg} \\ +\ 6.15\ \text{kg} \\ \hline 71.00\ \text{kg} \end{array}$$

9.
$$\begin{array}{r} 10250 \\ +\ 6450 \\ \hline 16700 \end{array} \qquad \begin{array}{r} 25400 \\ +\ 16700 \\ \hline 8700 \end{array}$$

EXERCISE–4.2

1. (a) 61.79 (b) 140.07 (c) 2479.5
   (d) 9 (e) 1.4 (f) 4736000
   (g) 29680 (h) 1945
2. (a) 45.472 (b) 4.68 (c) 0.0375
   (d) 1.7028
3. (a) 1040.6 (b) 51.29 (c) 94.213
   (d) 17.535 (e) 116.755 (f) 164.45
4. (a) 10.5205 (b) 1.05205
   (c) 0.0105205 (d) 105205
5. (a) 0.484 (b) 3.375 (c) 0.08
   (d) 6.25
6.
$$\begin{array}{r} 150.50 \\ \times\ 14.25 \\ \hline 75250 \\ 30100 \\ 60200 \\ 15050 \\ \hline 13446250 \end{array}$$

7.
$$\begin{array}{r} 85.25 \\ \times\ 29 \\ \hline 76725 \\ 17050 \\ \hline 1472.25 \end{array}$$

8.
$$\begin{array}{r} 352.85 \\ 115.25 \\ \hline 176425 \\ 70570 \\ 176425 \\ 35285 \\ \hline 40665.625 \end{array}$$

9.
$$\begin{array}{r} 2460 \\ \times 65 \\ \hline 12300 \\ 14760 \\ \hline 159.900 \end{array}$$

10.
$$\begin{array}{r} 50.75 \\ \times 3.25 \\ \hline 25375 \\ 10150 \\ 15225 \\ \hline 164.9375 \end{array}$$

EXERCISE–4.3

1. (a) 1.423 (b) 2.364 (c) 0.0456 (d) 0.005 (e) 0.0812 (f) 2.174 (g) 0.47635 (h) 0.0389
2. (a) 1.45 (b) 16.93 (c) 11.38 (d) 17.56 (e) 910 (f) 25 (g) 12 (h) 23.28125
3. (a) 7.368 (b) 7.163 (c) 5.86 (d) 5.137 (e) 0.138 (f) 0.07508 (g) 81.4 (h) 102.3
4. $53.75 \div 2.15 = 215 \times \frac{1}{2.75}$
   $= \frac{215}{11} = 19\frac{6}{11}$
5. $10.05 \div 17 = \frac{10.05}{100} \times \frac{1}{17}$
   $= \frac{201}{340} = \frac{19.5}{10} = \frac{7839}{680}$
6. $255.75 \div 16.5$
   $= \frac{255.75}{100} \times \frac{1 \times 10}{16.5} = \frac{31}{2} \times 2$
   $= ` 31$
7. $52.80 \div 1.65 = \frac{52.80}{100} \times \frac{1 \times 100}{65}$
   $= 32$
8. Area $= 2(l + b)$
   $915.9 = 2(35.5 + x)$
   or $915.9 = 71.0 + x$
   or $x = 915.9 - 71$
   or $x = 844.9$ m breath
9. Area $= \frac{\text{Perimeter}}{9} = \frac{260.8}{4 \times 100}$
   $= \frac{326}{3} = 65.2$
10. $11452.52 \div 254.50$
    $= 11452.52 \times \frac{1}{254.50}$
    $= \frac{22905}{509} = 44.8$

MCQS

1. (c) 2. (a) 3. (b) 4. (a) 5. (b) 6. (c) 7. (b) 8. (c) 9. (b) 10. (c)

EXERCISE–5.1

1. (a) $(\frac{1}{254.50})^4$ (b) $(\frac{1}{6})^3$ (c) $(\frac{-1}{3})^3$ (d) $(\frac{-4}{5})^3$
2. (a) $\frac{4}{49}$ (b) $\frac{-27}{125}$ (c) $\frac{1}{1296}$ (d) $\frac{32}{100000}$
3. (a) $(\frac{3}{17})^6$ (b) $(\frac{-2}{13})^5$
4. (a) $\frac{-1}{8}$ (b) $\frac{1}{25}$ (c) $\frac{121}{4}$ (d) $\frac{-64}{27}$

5. (a) $(\frac{1}{-2})^4$ (b) $(\frac{1}{-3})^3$ (c) $(\frac{-9}{4})^2$
   (d) $(\frac{-11}{5})^5$

6. (a) $\frac{675}{32}$ (b) $\frac{25}{81}$ (c) $\frac{1}{81}$ (d) -3
   (e) $\frac{-45}{8}$ (f) 16

7. (a) $\frac{-1}{7}$ (b) 28 (c) $\frac{-1}{125}$ (d) $\frac{25}{304}$

EXERCISE–5.2

1. (a) 64 (b) $\frac{-1}{125}$ (c) $\frac{729}{4096}$ (d) -32
   (f) $\frac{1}{64}$

2. (a) $(\frac{4}{5})^{15}$ (b) $(\frac{-3}{11})^{11}$ (c) $(\frac{-2}{13})^{12}$
   (d) $\frac{1}{\left(\frac{-1}{4}\right)^4}$ (e) $\frac{1}{(-6)^6}$ (f) $\left(\frac{-3}{13}\right)^{18}$

3. (a) 2592 (b) $\frac{9}{128}$ (c) 72
   (d) $(\frac{2}{5})$ (e) $2\frac{2}{3}$ (f) $19\frac{41}{49}$

4. (a) $(\frac{-2}{3})^2 < (\frac{-3}{2})^2$
   (b) $2^5 > 5^2$ (c) $(-3)^4 > (-4)^{-3}$

5. (a) $\frac{4}{121}$ (b) -27 (c) $\frac{16}{25}$ (d) $\frac{-1}{8}$

6. (a) $(\frac{-2}{5})^{10}$ (b) $(\frac{3}{4})^{21}$ (c) $(\frac{-11}{25})^6$
   (d) $(\frac{2}{5})^{-3}$

7. (a) 4^8

8. (a) $2^3 \times 3^5$ (b) $2^6 \times 3^5$

EXERCISE–5.3

1. (a) 1 (b) 1 (c) 1 (d) 3 (e) -1 (f) 0
   (g) 1 (h) 1

2. (a) $\frac{1}{3}$ (b) $\frac{7}{5}$ (c) $\frac{-11}{4}$ (d) $\frac{-13}{7}$
   (e) $\frac{-3}{4}$ (f) 6 (g) $\frac{-2}{3}$ (h) $\frac{-5}{7}$

3. (a) 1 (b) -1 (c) 1 (d) 1 (e) 1 (f) 1

4. (a) 1 (b) $\frac{1}{12}$ (c) $\frac{2}{5}$ (d) $\frac{1}{2}$

5. (a) $\frac{4}{9}$ (b) $\frac{1}{12}$ (c) $\frac{2}{5}$ (d) $\frac{1}{2}$

6. (a), (c) and (d) are true

7. $\frac{3}{5}$

EXERCISE–5.4

1. (a) 6000000000000
   (b) 10900000 (c) 0.43
   (d) 3800000 (e) 3.2 (f) 2793100

2. (a) 6.89×10^7 (b) 1.8×10^{10}
   (c) 8.93256×10^2 (d) 2 crore

3. (a) 1×10^{11} (b) 8.6×10^{28} g
   (c) 1.49×10^{11} m (d) 4.8×10^{-9}
   (e) 9.5×10^5 m

MCQS

1. (b) 2. (c) 3. (b) 4. (a) 5. (b) 6. (d)
   7. (a) 8. (b) 9. (b) 10. (c) 11. (b)
   12. (c)

EXERCISE–6.1

1. (a) $\frac{50}{3 \times 100} = \frac{1}{6} = 1 : 6$

   (b) $\frac{1.5}{2.7} = \frac{5}{9} = 5 : 9$

   (c) $\frac{60 \times 60}{35} = \frac{720}{7} = 720 : 7$

   (d) $\frac{7.35}{10.95} = \frac{49}{73} = 49 : 73$

(e) $\frac{1000000}{1000000} = \frac{10}{1} = 10 : 1$

(f) $\frac{16}{2 \times 24} = \frac{1}{3} = 1 : 3$

(g) $\frac{71}{140} = 1 : 20$

(h) $\frac{160}{1 \times 100} = \frac{8}{5} = 8 : 5$

2. $5 + 3 = 8 \rightarrow \frac{5}{8} \times 1200$

$= 570$ Ist san

or $\frac{3}{8} \times 1200 = 450$ 2nd san

3. $\frac{40}{9} = 40 : 9$ and $\frac{40}{6} = \frac{20}{3}$

$= 20 : 3$

The class VII A

4. $\frac{615}{1050} = \frac{123}{210} = 123 : 210$

5. (a) $\frac{2}{5} = \frac{3}{7}$ or $14 = 15$

Thus $\frac{2}{5}$ Ans.

(b) $\frac{4}{5} = \frac{5}{6}$ or $24 = 25$

Thus $\frac{4}{5}$ Ans.

6. $4 \times 35 = 20 \times x$

$20x = 4 \times 35$

or $x = \frac{4 \times 35}{20} = 7$

7. $a : b :: c$

$x : 15 :: 40$

$15x = 40$

$x = \frac{40}{15} = \frac{8}{3}$

8. $700 : x\ 6 : 11$

$700 : 11 = 6x$

$5x = 700 \times 11$

$4 = \frac{700 \times 11}{5}$

$\therefore \quad x = 1540$

9. $600 : 45 : x : 120$

$45x : 600 \times 120$

$x = \frac{600 \times 120}{45}$

$= 1600$

10. $50 : 200 : x : 700$

$250x : 500 \times 700$

$x = \frac{500 \times 700}{250}$

$= 140$ kg

EXERCISE–6.2

1. $\because$ ` 1650 in the cost of 50 kg

$\therefore$ ` 1650 in the cost of $\frac{50}{1650}$

$\therefore$ 4125 in the cost of $\frac{50}{1650} \times 125$

2. $\because$ The cost of 17 m = ` 1028.50

$\therefore$ The cost of 1 m = ` 1028.50

$\therefore$ The cost of 80 m

$= \frac{1028.50}{17} \times \frac{84}{100} =$ ` 4840

3. $\because$ She travels 73 km = 57

$\therefore$ She travels 1 km $= \frac{57}{73}$

$\therefore$ She travels 438 km

$= \frac{57}{73} \times 438 = 342$

4. $\because$ The might of 10 packets

$= 55$ kgm

$\therefore$ The might of 1 packets $= \frac{35}{10}$

$\therefore$ The might of 53 packets

$= \frac{35}{10} \times 53 = \frac{371}{2} = 185\frac{1}{2}$ kg

5. $\because$ A train travels in 5 hours

$= 295$ km

$\therefore$ A train travels in 5 hours

$= \frac{295}{5}$

$\therefore$ A train travels in 5 hours

$= \frac{651}{604} \times \frac{33}{4} = \frac{295}{5} \times \frac{4}{33}$

$= \frac{236}{33}$ km

6. $\because$ 7.5 m long shadow of 5 m pole

$= \frac{5}{7.5}$

$\therefore$ 97.5 m long shadow

of $\frac{97.5 \times 10}{10} = 65$

7. $\because$ 1 L container fill in 105

$\therefore$ 2.5 L container fill in 10×2.5

$= 25$

8. $\because$ 1 hour = ` 10

$\therefore$ 2 hour $= 10 \times 2 = 20 + 5$

= ` 25 Ans.

9. (a) $\because$ 150 sheets in 3 minutes

$\therefore$ 1 sheets in $\frac{3}{150}$ minutes

$\therefore$ 3000 sheets in $\frac{3}{150} \times 300$

= 60 minutes

(b) $\because$ In 3 minutes 150 sheets

$\therefore$ In $1\frac{1}{2} = \frac{3}{2} \times 60 = 90$

$= 150 \times 90 = 1350$ sheets

10. $\because$ 500 km in 20 litres

$\therefore$ 1 km in $\frac{20}{500}$

$\therefore$ 750 km in $\frac{20}{500} \times 750$

= 30 litres

And $\because$ In litres 500 km.

$\therefore$ In litres $\frac{500}{20}$

$\therefore$ In 27 litres $= \frac{500}{20} \times 27$

= 675

EXERCISE–6.3

1. (a) $\frac{3}{10}$ (b) $\frac{1}{8}$ (c) $\frac{29}{2000}$ (d) $\frac{1}{200}$
2. (a) 51% (b) 260% (c) 187.5%
   (d) 625% (e) $14\frac{2}{7}$% (f) $46\frac{2}{3}$%
3. (a) 8:25 (b) 1:16 (c) 7:2000
   (d) 2:1 (e) 47:300 (f) 1:2000
4. (a) 20% (b) $66\frac{2}{3}$% (c) $33\frac{1}{3}$%
   (d) 80% (e) $8\frac{4}{5}$% (f) 140°
5. (a) 0.25 (b) 0.003 (c) 0.0125
   (d) 0.0233 (e) 1.45 (f) 0.0125
6. (a) 4% (b) 235% (c) 750%
7. (a) $\frac{180}{100} \times \frac{9}{2} = \frac{81}{10}$

   (b) $\frac{10000}{100} \times \frac{2.25}{100} = 225$

   (c) $\frac{9}{100} \times \frac{46}{3} = \frac{69}{25}$

   (d) $250 \times \frac{0.5}{100 \times 10} = \frac{5}{4}$

   (e) 5000 g $\times \frac{140}{1000} = 700$

   (f) $60 \times \frac{10}{100 \times 9} = \frac{2}{3}$

   (g) $1650 \times \frac{21.5}{100 \times 10} = \frac{1419}{4}$
8. (a) $\frac{100}{500} \times 100 = 20\%$

   (b) $\frac{5 \times 1000}{160 \times 100} \times \frac{5}{76}\%$

   (c) $\frac{75 \times 100}{800} = \frac{75}{8}\%$

   (d) $\frac{0.5}{5} \times \frac{100}{10} = 10\%$

   (e) $\frac{450 \times 100 \times 100}{2.75 \times 1000} = \frac{180}{11}\%$

(f) $\frac{12 \times 100}{3 \times 60} = \frac{20}{3}\%$

9. $\frac{10}{100} \times x = 5$

or $x = \frac{5 \times 100}{10}$ $\therefore$ $x = 50$

10. $\frac{13}{4 \times 100} \times x = 13$

or $x = \frac{13 \times 4 \times 100}{13}$

$\therefore$ $x = 400$

11. $\frac{.05}{100 \times 100} \times x = 200$

or $x = \frac{200 \times 100 \times 100}{5}$

$\therefore$ $= 400000$

12. $\frac{y}{100} \times 250 = 21$

$y = \frac{21 \times 100}{250}$

$= \frac{42}{5}$

13. $\frac{40}{80} \times 100 = 50\%$

14. $\frac{95}{100} \times 100 = \frac{1900}{24} = 79\frac{41}{46}$

$= 79\frac{1}{6}$

15. $1500 - 575 = 925$

$= \frac{925}{1500} \times 100 = \frac{185}{3} = 61\frac{2}{3}\%$

EXERCISE–6.4

1. $840 \times \frac{40}{100} = 336$

$840 - 336 = 504$ girls

2. $450 \times \frac{16}{100} = 72$

$450 - 72 = 378$

3. $500 \times \frac{65}{100} = 325$

4. (a) $\frac{8}{18} \times 100 = \frac{400}{9} = 44\frac{4}{9}\%$

(b) $\frac{4}{18} \times 100 = \frac{200}{9} = 22\frac{2}{9}\%$

5. (a) $200 \times \frac{45}{100} = 90$

$\frac{54}{100} \times 100 = 28\%$

$90 - 54 = 36$

6. (a) $820 - 738 = 82$

$\frac{82}{820} \times 100 = 10\%$

7. (a) $\frac{65000}{105000} = 100$

$= \frac{1300}{21}\%$

8. $25 \times \frac{8}{100} = 18$

$225 - 18 = 207$

9. $5488 - 4802 = 686$

$\frac{686}{5488} \times 100$

$= \frac{25}{2} = 12\frac{1}{2}\%$

10. $\frac{565}{650} \times 100$

$= \frac{1130}{13} = 86.92\%$

$= \frac{420}{500} \times 100 = 84\%$

11. $210600 - 195000 = 15600$

$= \frac{15600}{195000} \times 100 = 8\%$

12. (a) $2120 \times \frac{25}{100} = 530$

(b) $2120 - 530 = 1590$

13. $15 \times \frac{75}{100} = \frac{45}{4} = 11\frac{1}{4}\%$

$15 - \frac{45}{4} = \frac{60 - 45}{4} = \frac{15}{4}$

$= 3\frac{3}{4}\%$

14. $350 \times \frac{15}{100} = \frac{105}{2} = 52.50$

350 + 52.50 = 402.50

15. $100000000 \times \frac{2.5}{100 \times 10}$
= 25000000
100000000 + 25000000
= 1025000000

16. Let the number of female = x
Percentage of female = 12
Percentage of make = (1w – 12)
= 88
Then 88% of x = 264
or $\frac{88}{100}$ of x = 264
or $x = \frac{269 \times 100}{88}$
x = 300 – 264 = 36 fumale

17. 16000 – 10400 = 5600
$\frac{5600}{16000} \times 100 = \frac{35}{2} = 17\frac{1}{2}\%$

18. $120 \times \frac{10}{100}$ = 12, 120 + 12 = 132

19. $9000 \times \frac{5}{100}$ = 450,
9000 + 450 = 9450

20. $\frac{420}{500} \times 100 = 84\%$
$\frac{536}{600} \times 100 = \frac{268}{3} = 89\frac{1}{3}$ vecter

EXERCISE–6.5

1. (a) $\frac{4}{24} \times 100 = \frac{50}{3} = 16\frac{3}{3}\%$
(b) $\frac{2}{150} = 8\%$
(c) 5060 – 4550 = 510
$\frac{510 \times 100}{4550} = \frac{102}{91}\%$
(d) 6560 – 6000 = 560
$\frac{560}{6560} \times 100 = \frac{350}{41}\%$

2. $24 \times \frac{10}{100} = \frac{12}{5} = 2.40$
24 – 2.40 = 22.60 ÷ 12
= 18.80

3. 300000 + 65000
= 365000 – 325000
= 40000
$\frac{40000}{365000} \times 100 = \frac{800}{73}\%$

4. 670 + 45 = 715 and 880 – 715
= 165
$\frac{165}{880} \times 100 = \frac{75}{4}\%$

5. 90 – 60 = 30
= 165
$\frac{30}{90} \times 100 = \frac{75}{3} = 33\frac{1}{3}\%$

6. 15 – 12 = 3
$\frac{3}{15} \times 100 = 20\%$

7. 120 × 3 = 360 and 120 × 2
= 240
120 + 120 = 240 ÷ 5
= 48 × 2 = 96
360 + 240 = 600 – 96 = 504
$\frac{504}{600} \times 100 = 84\%$

8. 25 – 12 = 3
$\frac{5}{20} \times 100 = 25\%$

9. $230 \times \frac{15}{100} = \frac{69}{2} = 34.50$

```
  230.00
   34.50
  -------
  195.50
```

11. $x \times \frac{5}{100} = 2880 \times \frac{10}{100}$
$5x = 288 \times 100$
$x = \frac{288 \times 100}{5}$
= 5760

12. $25 \times 8 = 200$

$30 \times 10 = 300$

$\frac{500 + 21}{100} = 105$ and $500 + 105$

$= 605$

13. (a) $x \times \frac{15}{100} = 5950$

$x = \frac{5950 + 100}{8}$

$= 7000 \times \frac{10}{100}$

$= 7000 + 700 = 7700$

(b) $7700 \times \frac{15}{100} = 1925 + 7700$

$= 8325$

14. $240 \times \frac{20}{100} = 48$

$240 - 48 = 192$

$275 - 192 = 83$

$\frac{83}{275} \times 100 = \frac{33}{11} = 30\frac{1}{11}\%$

EXERCISE–6.6

1. $SI = \frac{P \times R \times T}{100} = \frac{1250 \times 10}{100 \times 3}$

$= 525$

2. $SI = \frac{P \times R \times T}{100} = \frac{1820 \times 15}{100 \times 2}$

$\times \frac{73}{365} = \frac{27}{10} = 27.30$

3. $SI = \frac{P \times R \times T}{100}$

$= \frac{1600 \times 4 \times 361}{100 \times 2}$

$\times \frac{73}{365} = \frac{27}{10} = 27.30$

4. $\text{Time} = \frac{SI \times 100}{P \times R}$

$= \frac{150 \times 100}{750 \times 4} = 5$ pears

5. $\text{Rate} = \frac{SI \times 100}{P \times T}$

$= \frac{360 \times 100}{3000 \times 3} = 4\%$

6. $SI = \frac{SI \times 100}{P \times T}$

$= \frac{2600 \times 3 \times 10}{100} = 780 + 2600$

$= ` 3380$ (P)

7. $SI = \frac{P \times R \times T}{100}$

$= \frac{364.80}{100 \times 100} \times \frac{7}{2} \times 8$

$= \frac{3648}{125} =$ 29.180
364.80
373.98

8. $SI = \frac{P \times R \times T}{100}$

$= \frac{1472 \times 5 \times 3}{100 \times 100} = \frac{1104}{5}$

$=$ 220.80
1472.00
1692.80

9. $\text{Time} = \frac{SI \times 100}{P \times R}$

$= \frac{1326 \times 100 \times 3}{2652 \times 5} = 20$

10. $SI = \frac{P \times R \times T}{100}$

$= \frac{1250 \times 4 \times 5}{100} =$ 1250
−250
1000

$SI = \frac{P \times R \times T}{100}$

$= \frac{1250 \times 5 \times 3}{100} = \frac{375}{2}$

$=$ 1250.00
187.50
1002.50

11. $SI = \frac{SI \times 100}{P \times T}$

$= \frac{54 \times 100 \times 2}{45 \times 5}$

12. $SI = \frac{2600 \times 6 \times 71}{100 \times 365}$

$= \frac{156}{5} = 31.20\%$

MCQS

1. (c) 2. (a) 3. (b) 4. (c) 5. (d) 6. (c) 7. (b) 8. (b) 9. (a) 10. (b)

EXERCISE–7.1

1. (a) x^2 (b) $\frac{-x^2y^2}{2}$ (c) 0
   (d) $4x^2y + 3xy$
   (e) $4x^2 + y^2 + 12z^2$ (f) 0
2. (a) $10x^2$ (b) $\frac{-12\,x^2y^2}{6}$ (c) $2a + 2b$
   (d) $-2a^2 + 4a - 1$
   (e) $-5x^2 + y^2 + 6z^2$
   (f) $-2x - 3y + z - 2$
3. (a) $-x + y + 3z + 5$
   (b) $7x^2 - 8x + 9$
4. (a) $b^2 - a^2$ (b) $a^2 - b^2$
   (c) $\frac{x}{2} + 2y - 1$ (d) $3z - y - 4x$
   (e) $-x^2 - 2y^2 - 3z^2 - \frac{1}{2}$

EXERCISE–7.2

1. (a) $3a^2 - 9a$ (b) $-6x^3 - 21x^3$
   (c) $0.2(x^2y - y^2)$ (d) $18a^4 - 21a^3$
   (e) $\frac{3a^4}{4} + \frac{3ab^3}{4}$
   (f) $0.004s^2 + 0.0004^{rs}$
   (g) $6a^4 - 21a^2$ (h) $4x^5 - 8x^3y^5$
   (i) $\frac{-x^2}{2} - \frac{xy}{4}$
2. (a) $\frac{-9x^6y^5}{20}$ (b) $\frac{-x^{10}y^8}{2}$
   (c) $\frac{-8x^3y^2z}{45}$ (d) $12x^2y^2$
   (e) $-6a^3b$ (f) 0
3. (a) $-12p^{12}$ (b) $-24p^{10}$
4. (a) $\frac{9a^3b^2c^2}{22}$
5. (a) $2(a^3 - b^3 + 1)$
   (b) $-x(x^2 - x + 1)$
   (c) $2x^5$ (d) 0 (e) $a^2b^3 - 5a^3b$
   (f) $\frac{11x^3}{9} - \frac{5x^4}{9} - \frac{2x^5}{3}$
6. (a) -384
7. 875 10. (a) 1 (b) 54 (c) -120
8. (a) $12a^4 - 8a^3b^2 + 18ab - 12b^3$
   (b) $24p^6 + 42p^5q - 20pq^2 - 35q^3$
9. (a) $21x^2 - 43xy - 14y^2$
   (b) $-20a^2 + 9ab + 18b^2$
   (c) $15q^4 - 13q^2 + 2$ (d) $x^{10} - y^{10}$
   (e) $\frac{2a^2}{15} - \frac{ab}{15} - b^2$
10. (a) $4a^4 + 12a^2b + 9b^2$
    (b) $16p^2 - 56pq + 49^2$
    (c) $\frac{4x^2}{9} + \frac{20xy}{21} + \frac{25y^2}{49}$
    (d) $16a^2 + 24a^2b + 9a^2b^2$
    (e) $9p^2 - 12pq + 4q^2$
11. (a) $x^4 + 2x^3 + x^2 - 4x - 6$
    (b) $8x^2 - 4x - 6xy + 9y - 12$
    (c) $x^3 + y^3$ (d) $x^3 - y^3$
    (e) $x^3 - x^2 - 16x + 16$
12. (a) $-3y^2 + 6y$ (b) $8x^2 + xy - 11y^2$
    (c) $-32y^2 - 24xy$
    (d) $-a^2 - 10a + 8$

EXERCISE–7.3

1. (a) 9604 (b) 1004004 (c) 8096
   (d) 800 (e) 63.64 (f) 9898.56
   (g) 10800 (h) 13617 (i) 12600
   (j) 3000 (k) 20000 (l) 71280
2. (a) $x^2 - 81$ (b) $4x^2 - 9y^2$
   (c) $x^4 - y^4$ (d) $(\frac{x^4}{4} - \frac{4x^4}{9})$
   (e) $\frac{x^2}{4} - \frac{y^2}{9}$ (f) $x^2 - \frac{a^2}{y^2}$
3. (a) $4f^4 + \frac{4f^2g^2}{3} + \frac{g^2}{9}$
   (b) $\frac{b^2}{16} + \frac{bc}{6} + \frac{c^2}{6}$
   (c) $4q^2 + 12qr + 9r^2$
   (d) $25x + 60xy + 36y^2$
4. (a) $(5pr^2 + 6r)\ (5pr^2 - 6r)$
   (b) $(2a + 3bc)\ (2a - 3bc)$
   (c) $(\frac{x}{3} - \frac{y}{4})\ (\frac{x}{3} - \frac{y}{4})$
   (d) $(\frac{2x}{3} - \frac{5y}{6})\ (\frac{2x}{3} - \frac{5y}{6})$
5. (a) $4a^4 + 12a^2b + 9b^2$
   (b) $16p^2 + 56pq + 49q^2$
   (c) $\frac{4x^2}{9} + \frac{25y^2}{49}$
   (d) $9x^2 - 12xy + 4y^2$
   (e) $a^2 + 2 + \frac{1}{a^2}$
   (f) $x^2 - 2 + \frac{1}{x^2}$
6. (a) 60 (b) 16800 (c) 0.002
7. (a) $x^4 - a^4$ (b) $a^8 - 1$
8. 14
9. (a) 25 (b) 727

MCQS

1. (c) 2. (b) 3. (c) 4. (c) 5. (c) 6. (b) 7. (a) 8. (d) 9. (a) 10. (b)

EXERCISE–8.1

1. (a) $n + 10 = 25$ (b) $d - 11 = 40$
   (c) $7m = 84$ (d) $\frac{y}{2} = 33$
   (e) $5b - 3 = 12$ (f) $5x + 3 = 18$
   (g) $\frac{c}{6} - 2 = 8$ (h) $\frac{p}{4} + 4 = 40$
   (i) $8e - 8 = 80$ (j) $\frac{t}{7} + 13 = 20$
   (k) $(k + 2) - 9 = 53$
2. (a) Sum of x and 3 is 14.
   (b) Difference between 5 and y is -3.
   (c) 16 times m is 96.
   (d) Quotient of q and 9 is 9.
   (e) Three-fourth of a number p is 15.
   (f) 6 times x added to 11 gives 35.
   (g) 3 less than quotient of b and 7 is 8.
   (h) 14 less than 3 times x results in 4.
   (i) 7 subtracted from one-fifth of y is 8.
   (j) 5 subtracted from y gives -12.
   (k) Negative quotient of p and 7 is 7.
3. (a) $2x \pm 1 = 51$ [$x + (x + 1)$ or $(x - 1) + x$]
   (b) $2x + 6 = 24$
   (c) $x + \frac{x}{2} = 33$
   (d) $2(l + b) = 240$, where $l = 240$, where $l = 2b - 6$
   (e) $\angle A + \frac{\angle A}{3} + \frac{\angle A}{3} = 180°$
   ($\angle B = \angle C = \frac{\angle A}{3} \rightarrow$ given)

(f) $2x + 4 = 43$ (where x is Vaibhav's)

(g) $3x = 195$ (where x is the number of runs scored by Gautam.)

(h) $\frac{2x}{5} + x = 35$ (where x is the number of boys in class.)

EXERCISE–8.2

1. $x - 5 = 0$ or $x = 5$
2. $x + 4 = 0$ or $x = -4$
3. $b - 7 = 9$ or $b = 9 + 7 = 16$
4. $y + 8 = 20$ or $y = 20 - 8 = 12$
5. $P + 6 = -6$ or $p = -6 - 6$
   $p = -12$
6. $g + 9 = 9$ or $g = 9 - 9 = 0$
7. $5d = 45$ or $d = \frac{45}{5} = 9$
8. $30t = -60$ or $t = \frac{-60}{30} = -2$
9. $\frac{-r}{8} = 6$ or $r = -48$
10. $\frac{-9}{11} = \frac{18}{55}$ or $-55a = 18 \times 11$
    or $a = \frac{18 \times 11}{55} = \frac{18}{5} = 3.6$
11. $\frac{y}{16} = \frac{7}{48}$ or $-48y = 7 \times 16$
    or $y = \frac{7 \times 16}{48} = \frac{7}{3}$
12. $3x - 2 = 22$
    $3x = 22 + 2$
    $x = \frac{24}{3} = 8$
13. $4x + 9 = 45$
    $4x = 45 - 11$
    $a = \frac{24}{3} = 8$
14. $14l = 50$
    $l = \frac{56}{14} = 4$
15. $15P + 15 = 90$
    $15P = 90 - 15$
    $15P = 75$
    $P = \frac{78}{18} = 5$
16. $-5x - 8 = 107$
    or $-5x = 107 + 8$
    $-5x = 115$
    $x = \frac{115}{5} = -23$
17. $4y + 3y = 84$
    or $7x = 84$
    $x = \frac{84}{7} = 12$
18. $5 + 9x - 7 = 9x - 2 - x$
    or $9x - 9x + x = -2 - 5 + 7$
    or $x = 0$
19. $x + \frac{1}{2} = 19$
    or $x - 19 - \frac{1}{2}$
    or $x = \frac{38 - 1}{2}$
    $x = \frac{37}{2} = 18\frac{1}{2}$
20. $2s - \frac{1}{2} = -\frac{1}{3}$
    or $2s = -\frac{1}{3} + \frac{1}{2}$
    or $2s = \frac{-2 + 3}{6}$
    $2s = \frac{1}{6}$
    $s = \frac{1}{2 \times 2} = \frac{1}{12}$

EXERCISE–8.3

1. $-2(y + 3) = 7$
   or $-2y - 6 = 7$
   or $-2y = 7 + 6$
   $y = -13$
2. $-2m + \frac{5}{2} = \frac{37}{2}$

or $2m = \frac{37}{2} - \frac{5}{2}$

or $2m = \frac{37-5}{2} = \frac{32}{2}$

$m = \frac{16}{2} = 8$

3. $34 - 5[x - 1] = 4$

or $34 - 5x + 5 = 4$

or $-5x = 4 - 34 - 5$

or $-5x = -39$

$x = \frac{39}{5} = 7\frac{4}{5}$

4. $-3[4 - x] = 2x + 5$

or $-12 + 3x = 2x + 5$

or $3x - 2x = 5 + 12$

or $x = 17$

5. $0 = 18 + 9(m - 2)$

$0 = 18 + am - 18$

$0 = 9m$

$m = 0$

6. $4(4x - 4) + 3(2x - 1) = 7$

or $20x - 16 + 6x - 3 = 7$

$26x - 19 = 7$

$26x = 7 + 19$

$x = \frac{26}{26} = 1$

7. $4x - \frac{1}{3} = \frac{1}{5} + 3x$

or $4x - 3x = \frac{1}{5} + \frac{1}{3}$

$x = \frac{3+5}{15} = \frac{8}{15}$

8. $\frac{y}{5} - \frac{y}{6} = \frac{1}{30}$

or $\frac{6y - 5y}{30} = \frac{1}{30}$

or $30y = 30$

$y = \frac{30}{30} = 1$

9. $\frac{2x}{3} - \frac{x}{2} = 30$

or $\frac{4x - 3x}{6} = 30$

or $x = 180$

10. $\frac{7b}{8} - 15 = -1$

or $\frac{7b}{8} = -1 + 15$

or $\frac{7b}{b} = 14 = 8$

$= \frac{14 \times 8}{7} = 16$

11. $\frac{x}{4} = \frac{x}{5} + 1$

or $\frac{x}{4} - \frac{x}{5} = 1$

or $\frac{5x - 4x}{20} = 1$

or $x = 20$

12. $3P - 2(2P - 5) = 2(P + 3) - 8$

or $3P - 4P + 10 = 2P + 6 - 8$

or $-P - 2P = -2 - 10$

$-3P = -12$

$P = \frac{12}{3} = 4$

EXERCISE–8.4

1. $x + \frac{x}{2} = 45$

or $\frac{2x + x}{2} = 45$

or $3x = 90$

$x = \frac{90}{3} = 30$

2. $x + (x + 1) = 203$

$2x = 203 - 1$

$x = \frac{203}{2}\ 101 = 101$

3. $x \times \frac{5}{6} = 60$

or $5x = 60 \times 6$

$x = \frac{60 \times 6}{5} = 72$

4. $\frac{2}{3}x + \frac{1x}{3} = 3$

or $\frac{2x + x}{3} = 3$

$3x = 9$

or $x = -39$

5. $2x + 7 = 59$

or $2x = 59 - 7$

or $2x = 52$

$x = \frac{52}{2} = 26$

6. $x \times \frac{3x}{4} = 91$

$\frac{4x + 3x}{4} = 91$

$7x = 91 \times 4$

$x = \frac{91 + 4}{7} = 104$

7. $5x - 3 = 42$

$5x = 42 + 3$

$x = \frac{45}{5} = 9$

8. $x + x + 3 = 136$

$2x = 136 - 3$

$x = \frac{132}{2} = 66$

9. $x + x + 2 = 502$

$2x = 502 - 2$

$x = \frac{500}{2} = 250$

10. $x + \frac{2}{x} + \frac{3}{x} = 24$

or $\frac{x + 2x + 3x}{x} = 24$

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

11. $x + \frac{3x}{5} = 40$

or $\frac{5x + 3x}{5} = 40$

or $5x + 3x^2 = 200$

$8x = 200$

$x = \frac{200}{8} = 25$

$40 - 25 = 25$

12. $x + 2x + 3x = 100$

or $6x = 180$

$x = \frac{180}{6}$

30°, 60°, 90°

13. $x + 5x = 48$

$6x = 48$

$x = \frac{48}{6}$

8, 40 Ans.

14. $x + 4x = 15$

$5x = 15$

$x = \frac{15}{5}$

$= 3$

15. Brother's age = 11 years; Rekha's age = 6 years

$5x = 15$

$x = \frac{15}{5}$

$= 3$

16. $l = 37$, $b = 10$

17. No. of 500-rupee notes = 5, No. of 100-rupee notes = 25

18. 108°, 36°, 36°

19. Nisha's age = 18 years, Mother's age = 54 years

20. Gautam = 130 runs; Yuvraj = 65 runs

21. No. of 2-rupee coins = 10, No. of 1-rupee coins = 30

MCQS

1. (b) 2. (a) 3. (b) 4. (c) 5. (d) 6. (b) 7. (b) 8. (a) 9. (d)

EXERCISE–9.1

1. (a) $x = 28°$ (b) $x = 82°$
2. $\angle RSD = 62°$, $\angle QSD = 118°$
3. $a = 115°$, $b = 70°$, $c = 70°$, $d = 115°$,
4. $\angle BCE = 65°$
5. $\angle 2 = 115°$, $\angle 3 = 65°$, $\angle 4 = 115°$, $\angle 5 = 65°$, $\angle 6 = 115°$, $\angle 7 = 65°$, $\angle 8 = 115°$,

6. (a) No, Since corresponding angles are not same
   (b) Yes, Alternate angles are same
   (c) Yes, Sum of co-interior angle is 180°.
7. $b = 130°$, $a = 50°$, $d = 130°$, $e = 50°$, $f = 130°$, $g = 50°$, $h = 130°$, $i = 115°$, $j = 65°$, $k = 115°$, $l = 65°$, $n = 65°$, $o = 115°$, $p = 65°$,
8. (a) $x = 110°$, $y = 70°$
   (b) $x = 50°$, $y = 130°$
   (c) $x = 78°$, $y = 102°$
   (d) $x = 120°$, $y = 60°$
9. $x = 50°$, $y = 110°$
10. (a) $x = 34°$, $y = 146°$, $z = 148°$
    (b) $z = 70°$, $x = 60°$
11. $x = 105°$, $y = 75°$, $z = 75°$
12. (a) T (b) F (c) T (d) T (e) F

EXERCISE–9.2

1. (a) 70° (b) 45° (c) 32° (d) 30° (e) 1° (f) 8°
2. (a) 165° (b) 148° (c) 135° (d) 90° (e) 67° (f) 8°
3. Complementary : (c), (h); Supplementary : (d), (e), (g); None : (a), (b), (f)
4. 90° 5. 120° 6. 45° 7. 90°
8. (a) No (b) No 9. 45° 10. 90°
11. (a) $\angle CBD = 25°$,
    (b) Supplement of $\angle ABD = 115°$
12. (a) $\angle BOC = 32°$, $\angle AOC = 148°$, $x = 24$
13. (a) $\angle 4$ (b) $\angle 3$ (c) ($\angle 3$, $\angle 2$), ($\angle 3$, $\angle 4$), ($\angle 4$, $\angle 1$)
14. (a) ($\angle AOB$, $\angle BOC$), ($\angle DOC$, $\angle COB$), ($\angle COD$, $\angle DOE$), ($\angle EOA$, $\angle AOB$),
    (b) ($\angle DOE$, $\angle EOA$), ($\angle EOA$, $\angle AOB$),
    (c) ($\angle DOE$, $\angle AOB$), ($\angle AOC$, $\angle DOC$),
    (d) ($\angle AOC$, $\angle DOC$), ($\angle EOA$, $\angle AOB$),
    (e) ($\angle AOB$, $\angle BOC$)
15. (a) $x = 60°$, (b) $x = 70°$, (c) $x = 28°$
16. (a) F (b) T (c) T (d) T (e) F

MCQS

1. (b) 2. (c) 3. (a) 4. (a) 5. (a) 6. (a) 7. (b) 8. (c) 9. (a)

EXERCISE–10.1

Do it yourself.

EXERCISE–10.2

Do it yourself.

EXERCISE–10.3

1. (a), (c), (d) are right trangles 2. 5 units 3. (a) 2.4 cm (b) 34 cm (c) 1.4 cm (d) 2.5 cm 4. (a), (b), are not 5. 17 m. 6. 24 m 7. 19.5 m 8. 11.5 m 9. AC by 4 cm 10. (A) 12.5 m (b) 7.5 m

MCQS

1. (b) 2. (a) 3. (b) 4. (c) 5. (a) 6. (b) 8. (c)

EXERCISE–11.1

Do it yourself.

EXERCISE–11.2

1. Do it yourself.

MCQS

1. (b) 2. (c) 3. (d) 4. (a) 5. (c) 6. (b) 7. (b) 8. (b)

EXERCISE–12.1

Do it yourself.

MCQS

1. (b) 2. (b) 3. (b) 4. (c) 5. (c) 6. (c) 7. (b) 8. (b) 9. (a)

EXERCISE–13.1

1. (a) 64 cm (b) 47 cm (= 7 + 7 + × circumference) (c) 54 cm (d) 26 cm 2. (a) 12 (b) 7 (c) 3 3. 34 cm 4. 1.76 5. 15.7 cm 6. 157 cm, 25 cm, 50 cm 7. 178 m 8. 12 cm 9. 25000 10. 5174.4

EXERCISE–13.2

1. 18.5 cm 2. 900 m, 300 m 3. 12 cm^2 4. 60 cm^2 5. 84 cm^2 6. 20 dm 7. 4116 cm^2 8. ₹ 20 9. 240 10. ₹ 4400 11. 3 cm 12. (a) 6 cm^2, x = 2 cm (b) 20 cm^2, x = 4 cm (c) 30 cm^2, x = 13 cm 13. (a) 30 cm^2 (b) 50 cm^2, (c) 30 cm^2 (d) 18 cm^2 (e) 14 cm^2 14. (a) 36 cm^2, 6 cm (b) 75 cm^2, 7.5 cm 15. 30 cm 16. (a) 154 cm^2 (b) 38.5 cm^2 (c) 7546 cm^2 17. 20cm 18. 16 cm^2, 64 cm^2 19 lb, yes 20. Square, 17.021 m^2 21. ₹ 481 22. 30.25 cm^2 23. 88 cm^2 24. 40 cm, 192 cm^2 25. 46 cm^2 26. 2x 27. ₹ 51600 28. 246 cm^2 29 416 cm^2, 384 cm^2, 30 (a) 10.5 cm^2 (b) 10.5 cm^2 (c) 10.5 cm^2

MCQS

1. (b) 2. (b) 3. (d) 4. (c) 5. (c) 6. (a) 7. (b)

EXERCISE–14.1

1. (a) 5.5 (b) 8 (c) 6.83 20 Mdn = 6, Mo = 6 (b) Mdn = 19, Mo = 19 3. $\bar{x}$ = 3.85, Mdn = 4, Mo = 6 4. Mdn = 48 kg 5. Mo = 14 6. $\bar{x}$ = 68.33, Mdn = 19 9. 1564 10. (a) x = 4 (b) Range = 15

EXERCISE–14.2

2. (a) 50 (b) 35 (c) 205 (d) IXth (e) VI, VIII **1.** (a) The given bar graph shows the production of food grains in million tonnes during six years. (b) 2001 (c) 2004 (d) 11 : 6 3. (a) The given bar graph shows the production of cloth (in lakh metres) in various years in a textile mill. (b) 6 (c) 2013 (d) 2010 (e) 11 : 4.

EXERCISE–14.3

2. (a) $\frac{1}{3}$ (b) $\frac{1}{2}$ (c) $\frac{1}{3}$ (d) $\frac{1}{2}$ 2. (a) $\frac{1}{6}$ (b) $\frac{1}{2}$ (c) $\frac{1}{2}$v (d)$\frac{1}{3}$ (e) $\frac{2}{3}$ 3. $\frac{1}{4}$ 4. $\frac{1}{4}$ 5. $\frac{7}{15}$ 6. $\frac{75}{125}$ 7. (a) 4 (b) 8 (c) 32 (d) 2_{10} 8. Possibl;e pitcp,es 36 (a) $\frac{1}{36}$ (b) $\frac{1}{18}$ 9. Do it yourself.

MCQS

1. (d) 2. (c) 3. (b) 4. (b) 5. (d) 6. (a) 7. (b) 8. (c) 9. (b) 10. (a) 11. (b) 12. (b)

EXERCISE–15.1

Do it yourself.

Try it!

(a) F (b) F (c) T (d) F (e) T (f) F (g) F

EXERCISE–15.2

1. H, O, S, X, Z, 2. a, c, f 3. 5 4. No 5. Do it yourself 6. 4 7. (A, E, C) 8. (H, I, X). 9. S = 2, I = 2 10. Parallelogram

MCQS

1. (c) 2. (c) 3. (d) 4. (c) 5. (a) 6. (d) 7. (b) 8. (d) 9. (c) 10. (d) 11. (d)

Try it!

(a) 8

EXERCISE–16.1

1. (a) iii (b) iv (c) i (d) ii 2. (a) Cuboid (b) Sphere (f) Cube (g) Cone (h) cylinder 3. Do it yourself. 4. (b), (c), (f), 5. Do it yourself.

6.

	3d Object	Number of Vertices	Number of Edges	Number of Faces
(a)	Sphere	0	0	
(b)	Cylinder	0	2	
(c)	Cone	1	1	
(d)	Triangular Prism	6	9	
(e)	Tetrahedron	4	6	
(f)	Triangular Pyramid	4	6	

MY FIRST MATHEMATICS-8

EXERCISE–1.1

1. (a) $\frac{10}{-15}$ (b) $\frac{-12}{18}$

2. (a) $\frac{-8}{10}$ (b) $\frac{-12}{15}$

3. (a) $\frac{-14}{63} = \frac{\mathbf{-2}}{9} = \frac{-18}{\mathbf{81}}$

   (b) $\frac{-5}{-12} = \frac{\mathbf{25}}{60} = \frac{-35}{\mathbf{-84}}$

4. (a) Yes (b) No (c) No

5. (a) $\frac{9}{14}$ (b) 0 (c) $\frac{1}{4}$ (d) $\frac{-1}{2}$ (e) $\frac{-6}{7}$ (f) $\frac{5}{6}$

6. (a) $\frac{-11}{8} = \frac{-33}{-24}$ (b) $\frac{-12}{8} < \frac{60}{45}$

   (c) $\frac{75}{-100} > \frac{-150}{250}$ (d) $\frac{3}{-8} > \frac{-8}{12}$

7. (a) $\frac{4}{-7}, \frac{-2}{9}, \frac{5}{63}, \frac{2}{9}$

   (b) $\frac{7}{-10}, \frac{-3}{7}, \frac{2}{-5}, \frac{-1}{-9}$

   (c) $\frac{7}{-10}, \frac{-5}{8}$ and $\frac{-3}{8}$

   (d) $\frac{17}{-30}, \frac{-11}{20}, \frac{7}{-15}, \frac{-3}{10}$

8. (a) $\frac{-13}{42}, \frac{-23}{42}, \frac{-4}{7}, \frac{-9}{14}$

   (b) $\frac{9}{-24}, \frac{5}{-12}, \frac{-7}{16}, \frac{-3}{4}$

   (c) $\frac{7}{-18}, \frac{-5}{12}, \frac{4}{-9}, \frac{-2}{4}$

   (d) $\frac{4}{5}, \frac{-1}{2}, \frac{-4}{7}, \frac{-2}{3}$

9. (a) False (b) True (c) False (d) False (e) True (f) False

10. to 12. Do it yourself.

EXERCISE–1.2

1. (a) $\frac{5}{7}$ (b) $\frac{-13}{11}$

2. (a) $\frac{7}{-6}$ (b) $\frac{-5}{3}$

3. $\frac{11}{-24}$ 4. $\frac{29}{5}$

5. $\frac{8}{9}$ 6. $\frac{-2}{5}$

7. (a) $\frac{33}{70}$ (b) $\frac{-3613}{90}$

(c) $\frac{-177}{286}$ (d) $\frac{17}{24}$

8. $\frac{-50}{27}$ 9. $\frac{8}{17}$

10. $\frac{-2}{5}$

11. to 12. Do it yourself 13. 14.

EXERCISE–1.3

1. to 2. Do it yourself.

3. (a) $\frac{-9}{15}, \frac{-8}{15}$ (b) $\frac{-21}{35}, \frac{-20}{35}$

4. (a) $\frac{24}{39}, \frac{23}{39}, \frac{19}{39}, \frac{17}{39}, \frac{13}{39}$

(b) $\frac{-3}{8}, \frac{-2}{8}, \frac{-1}{8}, \frac{1}{8}, \frac{2}{8}$

(c) $\frac{-38}{143}, \frac{-35}{143}, \frac{-30}{143}, \frac{-20}{143}, \frac{-15}{143}$

5. (a) $\frac{71}{110}, \frac{73}{110}, \frac{74}{110}, \frac{75}{110}, \frac{77}{110}, \frac{77}{110}$

(b) $\frac{-101}{170}, \frac{-103}{170}, \frac{-105}{170}, \frac{-107}{170}, \frac{-108}{170}, \frac{-109}{170}$

(c) $\frac{-3}{13}, \frac{-2}{13}, \frac{1}{13}, \frac{3}{13}, \frac{5}{13}, \frac{6}{13}$

6. (a) $\frac{101}{130}, \frac{102}{130}, \frac{103}{130}, \frac{104}{130}, \frac{105}{130}, \frac{106}{130}, \frac{107}{130}, \frac{108}{130}, \frac{109}{130}, \frac{110}{130}$

(b) $\frac{-32}{121}, \frac{-31}{121}, \frac{-30}{121}, \frac{-29}{121}, \frac{-28}{121}, \frac{-27}{121}, \frac{-26}{121}, \frac{-25}{121}, \frac{-24}{121}, \frac{-23}{121}$

EXERCISE–1.4

1. ∵ In 1 hour train travels

$60\frac{1}{2}$ km $= \frac{121}{2}$ km

∴ In $10\frac{1}{2}$ hrs and $\frac{45}{2}$ minutes

$= \frac{121}{2} + \frac{3}{2 \times \cancel{60}_{4}} = \frac{121}{2} + \frac{3}{8}$

$= \frac{84+3}{8} = \frac{487}{8}$ h.

∴ The speed of car given

$= \frac{121}{2} \times \frac{487}{8} = \frac{58927}{16}$ km.

$= 3682.94$ km.

2. ∵ The price of 12 shirts

$= ` 3600\frac{2}{5} = \frac{18002}{5}$

∴ The price of 1 shirt

$= \frac{\cancel{18002}^{9001}}{5 \times \cancel{12}} = ` \frac{9001}{6}$

∴ The price of 4 shirts

$= \frac{9001}{\cancel{6}_{3}} \times 4 = ` \frac{18002}{3}$

∵ The price of 6 pant

$= ` 3000\frac{3}{4} = ` \frac{12003}{4}$

∴ The price of 1 pants

$= \frac{\cancel{12003}^{4001}}{4 \times \cancel{6}_{2}} = ` \frac{4001}{8}$

∴ The price of 4 pants

$= \frac{4001}{\cancel{8}_{2}} \times 4 = ` \frac{4001}{2}$

Now price of 4 shirts and 4 Pants

$= \frac{18000}{3} + \frac{4001}{2}$

$= \frac{36004 + 12003}{6}$

$= ` \frac{48007}{6} = ` 8001$

3. ∵ A train travels $50\frac{2}{5}$ km $= \frac{252}{5}$ km in 1 hour

$\therefore$ A train travels 1 km $= \frac{5}{252}$ km.

$\therefore$ It travels 200 km 100 m $= 200 + \frac{100}{1000} = 200 + \frac{1}{10} = \frac{2000+1}{10}$

$= \frac{2001}{10}$ km

$= \frac{5}{252} \times \frac{2001}{10}$

$= \frac{2001}{504}$ hrs.

4. Let the number $= x$

So, $\frac{3}{5}x + \frac{2}{7} = 44$

or, $\frac{3}{5}x = 44 - \frac{2}{7}$

or, $\frac{3x}{5}x = \frac{308-2}{7}$

or, $\frac{3x}{5}x = \frac{306}{7}$ $\frac{\overset{102}{\cancel{306}}}{7} \times \frac{5}{\cancel{3}} = \frac{510}{7}$

EXERCISE–2.1

1. (a) $\left[\frac{-1}{1}\right]$ (b) 3^4 (c) $\left[\frac{2}{83}\right]^4$ (d) 5°
2. (a) $\frac{12}{5}$ (b) $\frac{-1}{10}$ (c) -3 (d) $\frac{19}{64}$ (e) $\frac{32}{81}$
3. (a) 108 (b) 1 (c) $\frac{1}{7776}$ (d) 3125 (e) 29
4. 2
5. (a) -3 (b) 7 (c) 2 (d) -13
6. (a) $\frac{-3}{8}$ (b) $\frac{-24}{73}$
7. $\frac{-9}{10}$ 8. $\frac{1}{3}$ 9. $\frac{-5}{11}$

EXERCISE–2.2

1. (a) 3×10^{-8} (b) 8.9×10^{10} (c) 1×10^{-5} (d) 2.803×10^{-2} (d) 2.803×10^{-2} (e) 7×10^{-11} (f) 5.7×10^{-7}
2. (a) 7250000000 (b) 97137000000000 (c) 40185300 (d) 8.000000008 (e) 0.00000000000053 (f) 0.000000837
3. (a) 1×10^{-6} m (b) 5×10^{-7} m (c) 6.378×10^{7} m (d) 1.496×10^{8} km (e) 1.275×10^{-8} km (f) 3.8446×10^{8} m (g) 8.85×10^{8} (h) 3×10^{8} m/s
4. $51 \times 28 = 1.82:1$
5. $5000 : 51 = 109.8:1$
6. 0.2625 m

MCQS

1. (c) 2. (d) 3. (c) 4. (c) 5. (c)

EXERCISE–3.2

1. (a) F (b) F (c) F (d) F (e) T (f) T
2. N
3. (a) Yes (b) Yes (c) No (d) Yes
4. (a) ✓ (b) ✓ (c) ✗ (d) ✗
5. (a) 15 (b) 37 (c) 69 (d) 271
6. (a) ✓ (b) ✓ (c) ✗ (d) ✓
7. (a) 25 (b) 49 (c) 100
8. (a) 1 + 3 + 5 + 7 + 9 + 11 + 13
   (b) 1 + 3 + 5 + 7 + 9 + 11 + 13
   (c) 1 + 3 + 5 + 7 + 9 + 11 + 13 + 15 + 17
   (d) 1 + 3 + 5 + 7 + 9
9. (a) ✓
10. (a) ✓ (b) ✓
11. (a) 1296 (b) 3249
12. (a) Yes, 142.

EXERCISE–3.2

1. a.

2	400
2	200
2	100
2	50
5	25
	5

$\sqrt{400}$ $= \underline{2 \times 2} \times \underline{2 \times 2} \times \underline{5 \times 5}$
$= 2 \times 2 \times 5 = 20$

b.

3	729
3	243
3	81
3	27
3	9
	3

$\sqrt{729}$ $= \underline{3 \times 3} \times \underline{3 \times 3} \times \underline{3 \times 3}$
$= 3 \times 3 \times 3 = 27$

c.

5	625
5	125
5	25
	5

$\sqrt{625}$ $= \underline{5 \times 5} \times \underline{5 \times 5}$
$= 5 \times 5 = 25$

d.

2	1296
2	648
2	324
2	162
3	81
3	27
3	9
	3

$\sqrt{1296}$ $= \underline{2 \times 2} \times \underline{2 \times 2} \times \underline{3 \times 3} \times \underline{3 \times 3}$
$= 2 \times 2 \times 3 \times 3 = 36$

e.

2	1764
2	882
3	441
3	147
7	49
	7

$\sqrt{1764}$ $= \underline{2 \times 2} \times \underline{3 \times 3} \times \underline{7 \times 7}$
$= 2 \times 3 \times 7 = 42$

f.

2	4096
2	2048
2	1024
2	512
2	256
2	128
2	64
2	32
2	16
2	8
2	4
	2

$\sqrt{4016}$ $= \underline{2 \times 2} \times \underline{2 \times 2} \times \underline{2 \times 2} \times \underline{2 \times 2} \times \underline{2 \times 2} \times \underline{2 \times 2}$
$= 2 \times 2 \times 2 \times 2 \times 2 \times 2$
$= 64$

g.

2	7744
2	3872
2	1936
2	968
2	484
2	242
11	121
	11

$\sqrt{7744}$ $= \underline{2 \times 2} \times \underline{2 \times 2} \times \underline{2 \times 2} \times \underline{11 \times 11}$
$= 2 \times 2 \times 2 \times 11 = 88$

h.

7	5929
7	847
11	121
	11

$\sqrt{5929}$ $= \underline{7 \times 7} \times \underline{11 \times 11}$
$= 7 \times 11 = 77$

2. a. $\sqrt{\frac{625}{1296}} = \frac{25}{36}$

5	625
5	125
5	25
	5

$\sqrt{625}$ $= \underline{5 \times 5} \times \underline{5 \times 5}$
$= 25$

2	1296
2	648
2	324
2	162
3	81
3	29
3	9
	3

$\sqrt{1296} = \underline{2 \times 2} \times \underline{2 \times 2} \times \underline{3 \times 3}$
$\underline{3 \times 3}$
$= 2 \times 2 \times 3 \times 3$
$= 36$

b. $\sqrt{\frac{529}{841}} = \frac{23}{29}$

23	529
	23

$23 \times 23 = 23$

29	841
	29

$29 \times 29 = 29$

c. $2\frac{14}{25}\sqrt{\frac{64}{25}}$

2	64
2	32
2	16
2	8
2	4
	2

$\underline{2 \times 2} \times \underline{2 \times 2} \times \underline{2 \times 2}$
$= 2 \times 2 \times 2 = 8$

5	25
	5

$= \underline{5 \times 5}$
$= 5$

d. $23\frac{46}{121} = \sqrt{\frac{2809}{121}} = \frac{53}{11} = 4\frac{9}{11}$

53	2809
	53

11	121
	11

$\underline{53 \times 53} = 53$ $\quad 11 \times 11 = 11$

3.

2	1890
3	945
3	315
3	105
5	35
	7

$\underline{2} \times \underline{3 \times 3} \times \underline{3} \times \underline{5} \times \underline{7} = 2 \times 3 \times 5 \times 7 = 210$ Ans.

Here, we observe that the numbers 2,5,6 are in umpaired number form, so the given number should multiplied by $2 \times 3 \times 5 \times 7$.

4.

2	9408
2	4704
2	2352
2	1176
2	588
2	294
3	147
7	49
	7

$= \underline{2 \times 2} \times \underline{2 \times 2} \times 2 \times 2 \times \underline{3} \times \underline{7 \times 7}$

No. 3 is umpaired.

So the required no. = 3 Ans.

5.

2	1764
2	882
3	441
3	147
7	49
	7

$\underline{2 \times 2} \times \underline{3 \times 3} \times \underline{7 \times 7} = 2 \times 3 \times 7 = 42$ rows Ans.

6.

2	6400
2	3200
2	1600
2	800
2	400
2	200
2	100
2	50
5	25
	5

$\underline{2 \times 2} \times \underline{2 \times 2} \times \underline{2 \times 2} \times \underline{2 \times 2} \times \underline{5 \times 5}$

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

= 80 soldiers

7.

2	1200
2	600
2	300
2	150
3	75
5	25
	5

$\underline{2 \times 2} \times \underline{2 \times 2} \times \underline{3} \times \underline{5 \times 5}$

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

No. 3 is impaired.

So the answer = 3,60.

8.

3	3645
3	1215
3	405
3	135
3	45
3	15
	5

$\underline{3 \times 3} \times \underline{3 \times 3} \times \underline{3 \times 3} \times 3 \times 5$

$= 3 \times 3 \times 3 \times 5 = 135$

$\therefore$ Answer = 3 and 135.

9. $8160 - 60 = 8100$

2	8100
2	4050
3	2025
3	675
3	225
3	75
5	25
	5

$= \underline{2 \times 2} \times \underline{3 \times 3} \times \underline{3 \times 3} \times \underline{5 \times 5}$

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

10.

2	2304
2	1152
2	576
2	288
2	144
2	72
2	36
2	18
3	9
	3

$\underline{2 \times 2} \times \underline{2 \times 2} \times \underline{2 \times 2} \times \underline{2 \times 2} \times \underline{3 \times 3} = 2 \times 2 \times 2 \times 2 \times 3 =$ 48 Ans.

EXERCISE–3.3

1. (a) 234 (b) 625 (c) 135 (d) 540
2. (a) $\frac{54}{47}$ (b) $\frac{28}{16}$ (c) $8\frac{5}{7}$ (d) $3\frac{4}{15}$
3. The greatest four digit no. =9999

Square =

9	99 99	99
9	81 ↓ ↓	
189	1899	
	1701	
	198	

Thus, 9999–198 = 9801 Ans.

4. The greatest five digit no. = 99999

$$\begin{array}{r|l} 3 & \overline{99}\,\overline{99} \mid 316 \\ \underline{3} & 9\downarrow\downarrow \\ 61 & \times 99 \\ \underline{1} & \underline{61} \\ 629 & 3899 \\ & \underline{3766} \\ & 143 \end{array}$$

Thus 99999 – 143 = 99856 Ans.

5.

$$\begin{array}{r|l} 5 & \overline{30}\,\overline{64}\,\overline{52} \mid 553 \\ \underline{5} & 25\downarrow\downarrow \\ 10 & 5564 \\ \underline{5} & \underline{525} \\ 1103 & 3952 \\ & \underline{3309} \\ & 643 \end{array}$$

$(553)^2 < 306452 < (554)^2$

Number should be added

$= (554)^2 - 306452$

$= 306916 - 306452 = 464$ Ans.

6.

$$\begin{array}{r|l} 4 & 19\,44\,91 \mid 441 \\ \underline{4} & 16\downarrow\downarrow \\ 8 & 4344 \\ & \underline{4336} \\ 881 & 891 \\ & \underline{881} \\ & 10 \end{array}$$

Thus, the answer = 10, 441

7. (a) 4.1 (b) 6.09 (c) 0.0045
   (d) 0.0197
8. (a) 1.73 (b) 4.35 (c) 1.30
   (d) 0.89
9. (a) 0.54 (b) $\frac{1}{15}$
10. (a) 161,14.49

MCQS

1. (b) 2. (c) 3. (d) 4. (b) 5. (c) 6. (d) 7. (d)

EXERCISE–4.1

1. (a) 0.19688 (b) 0.729 (c) 42.875
   (d) 0.000216 (e) $\frac{1331}{1728}$ (f) $\frac{-8}{343}$
2. (a) 74088 (b) 658503 (c) 175616
   (d) 778688
3. (b) 27 (d) 216 (f) 729 (g) 1000
4.

2	43200
2	21600
2	10800
2	5400
2	2700
2	1350
3	675
3	225
3	75
5	25
	5

$\underline{2 \times 2 \times 2} \times \underline{2 \times 2 \times 2} \times \underline{3 \times 3 \times 3} \times \underline{5 \times 5}$

Thus to make its perfect cube it must m multiply 43200 by 5.

5.

2	13122
3	6561
3	2187
3	729
3	243
3	81
3	27
3	9

$2 \times \underline{3 \times 3 \times 3} \times \underline{3 \times 3 \times 3} \times \underline{3 \times 3}$

$= 2 \times 3 \times 3 = 18$ Ans.

6. the volume of that water
   $= (\text{edge})^3$
   $= 1.8 \times 1.8 \times 1.8 = 5.832\ m^2$
7. (a) 216 (c) 512 (e) 1000 (f) 13824
8. (b) 27 (c) 729 (e) 6859 (f) 531441

EXERCISE–4.2

1. (a) 45 (b) 81 (c) 63 (d) 82 (e) – 42 (f) – 56
2. (a) $\frac{15}{17}$ (b) $1\frac{2}{11}$ (c) $\frac{7}{55}$ (d) $\frac{3}{5}$
3. (a) 7.2 (b) 0.44 (c) 0.09 (d) 0.15
4. (a) 4 (b) 3 (c) 5 (d) 5
5. (a) 9 (b) 9 (c) 2 (d) 13
6. (a) 3.76 (b) 4.47 (c) 19.90 (d) 0.53

MCQS

1. (a) 2. (b) 3. (a) 4. (b) 5. (b) 6. (b) 7. (c)

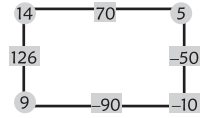
EXERCISE–5.1

1. (a)
$$\begin{array}{r} 8\,\mathbf{5} \\ +\,5\,6 \\ \hline 1\,4\,1 \end{array}$$
(b)
$$\begin{array}{r} \mathbf{4}\,7 \\ +\,6\,\mathbf{4} \\ \hline 1\,1\,1 \end{array}$$
(c)
$$\begin{array}{r} 4\,\mathbf{7}\,6 \\ +\,\mathbf{9}\,7\,\mathbf{8} \\ \hline 1\,4\,5\,4 \end{array}$$

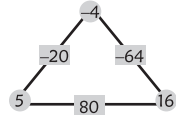
2. (a)
$$\begin{array}{r} \mathbf{6}\,3\,8 \\ -\,2\,9\,\mathbf{3} \\ \hline 3\,\mathbf{4}\,5 \end{array}$$
(b)
$$\begin{array}{r} 8\,\mathbf{9}\,5 \\ -\,\mathbf{7}\,8\,6 \\ \hline 1\,0\,\mathbf{9} \end{array}$$
(c)
$$\begin{array}{r} 7\,\mathbf{9}\,\mathbf{8} \\ -\,\mathbf{2}\,9\,9 \\ \hline 4\,9\,9 \end{array}$$

3. 8
4. 17
5. (a)
$$\begin{array}{r} 2\,\mathbf{4} \\ \times\,5\,9 \\ \hline 2\,1\,6 \\ 1\,2\,0\times \\ \hline 1\,4\,1\,6 \end{array}$$
(b)
$$\begin{array}{r} 8\,\mathbf{5} \\ \times\,7\,6 \\ \hline 5\,1\,0 \\ 5\,9\,5\times \\ \hline 6\,4\,6\,0 \end{array}$$
(c)
$$\begin{array}{r} 8\,8\,8 \\ \times\,4\,7\,9 \\ \hline 7\,9\,9\,2 \\ 6\,2\,1\,6\times \\ 3\,5\,5\,2\times\times \\ \hline 4\,2\,5\,3\,5\,2 \end{array}$$

6. a = 450, b = 370
7. a = 260, b = 220
8. (a)

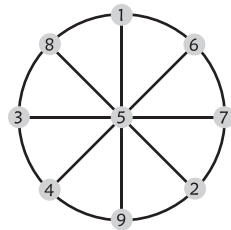


(b)



EXERCISE–5.2

1. (a) 6, 15 (b) 4, 8 (c) 12, 20
2. 9230, 3902, 3920, 9320, 9302, 3290, 3092, 9032
3. 580, 590, 890, 980, 990, 850
4. (b) 4338 (d) 63909
5. (a) 2, 8 (b) 09
6. 502, 504, 506, 508, 510, 512, 514, 516
7. (a) 1, 4, 7 (b) a = 2, 5, 8 & b = 5
8. 1002, 1005, 1008, 1011, 1014, 1017, 1020, 1023, 1026, 1029, 1032, 1035, 1038, 1041, 1044, 1047.
9. (a) 3 (b) 2 (c) 2 (d) 1 (e) 2
10.



MCQS

1. (c) 2. (b) 3. (a) 4. (d) 5. (a) 6. (b) 7. (d)

EXERCISE–6.1

1. (b) is not polynomial since the degree of the variable is fraction

(d) is not a polynomial since the degree of the variable x a fraction $\frac{3}{2}$.

2. (a) 3 (b) 4 (c) 5 (d) 5 (e) 7
3. (a) $-2xy + 3x^2y^3 + x^3y^2 - x^4y$; $3x^2y^3 + x^3y^2 - 2xy - x^4y$ (b) $ab^5 - 6ab^3 + 5a^2b^4$; $ab^5 + 5a^2b^4 - 6ab^3$ (c) $1\ pq - pq^3 + p^2q^4$; $p^2q^4 - pq^3 - pq + 1$ (d) $xy^3 - x^3y$; $xy^3 + x^3y$ (e) $8xy^4 - 9x^3 - y^3 - 7x^5y + x9^6y^2$; $8xy^4 - 9x^2y^3 + 7x^5y$
4. (a) $14x^3 - x^2 + x$ (b) $7a^3b - 8a^2b + 3ab + 1$ (c) 0 (d) $-abc^2 + 3$ (e) $\frac{-xy}{3} + \frac{7x^2y}{20} + \frac{7xy^2}{5}$
5. (a) $x^2 - 10x + 10$ (b) $-7x^2 + 15x + 8$ (c) $a^3 - 5a^2 + 4a - 1$
6. (a) $30a^3b^3$ (b) $-3x^4y^3z^2$ (c) $-x^3y^3z$ (d) $6x^3 - 14x^2 + 7x - 1$ (e) $-3x^4 + 9x^3 + 6x^3y - x^3y^2 - 18x^2y + 3xy^2 - 3xy^2 - 2x + 6$ (f) $x^4 - x^3y - 1xy^3 + y^4$ (g) $2x^3 - x^2y - 14x^2 + 7xy + 12x - 6y$ (h) $x^2y^2 - x^2y - xy^2 - xy + x + y$ (i) $6a^5b + 3a7b^2 - 14a^2b^4 - 7ab^5$ (j) $y^4 + 4y^3 + 4y^2 - 9$
7. (a) false, 2 + a (b) false, 3a + b (c) True (d) False, a^2

EXERCISE–6.2

1. (a) 2a (b) 3
2. (a) $3ab + \frac{3b^2}{2} + 6b$ (b) $\frac{6a^2}{c} - 4a + 3c$
3. (a) $x^2 + 2$ (b) $2x^3 + 9x + 5$
4. (a) $Q = x + 3$; $R = 0$ (b) $Q = y^2$; $R = -1$
5. (a) $Q = 2y^3 + 3$; $R = 0$ (b) $Q = x - 2$; $R = 6x - 12$
6. (a) $Q = y^3 - x^2 - 2$; $R = 49x - 15$ (b) $Q = 2y^2 + 3y + 1$; $R = -9y - 10$
7. (a) $Q = x^2 - x + 1$; $R = 0$ (b) $Q = 4x^2 - 2x + 1$; $R = 0$
8. (a) $k = 12$ (b) $k = -15$
9. $x + 1$
10. $k = 1$

EXERCISE–6.3

1. (a) $4x^2 + 12x + 98$ (b) $25a^2 + 30ab + 9b^2$ (c) $25x^2 - 30xy + 9b^2$ (d) $25\ x^2 - 30xy + 9b^2$ (e) $16a^2 + 6ab + 4b^2$ (f) $81a^2 - 36ab + 4b^2$ (g) $2x^2 + 25y^2 - 10\ 2xy$ (h) $3a^2 + 2b^2 + 26ab$
2. (a) 1,025 (b) 88,804 (c) 1.1025 (d) 8.8804 (e) 14,400 (f) 20,200 (g) 14,400
3. (a) $4x^2 - 1$ (b) $y^2 - 4x^2$
4. (a) 14 (b) 194
5. 8 6. 0 7. 17
8. 60 9. 13 10. 26
11. (a) 66 (b) 4354
12. (a) 1 (b) –1
13. (a) $a^4 - b^4$ (b) 4ab (c) $2b^2 + 2ab$

EXERCISE–6.4

1. (a) x^2y (b) 7pqr (c) a (d) $6a^2$ (e) $3y^3z^2$
2. (a) 2 (x + 4) (b) 3 (a – 3) (c) 5 (a^2 + 3) (d) 5pqr (2p + 3q) (e) 14 x (1 – 2x) (f) a (6b – 1) (g) 3 (x^2 + 3x + 4) (h) 4a ($2a^2$ – 4a + 1) (i) 4x (x – $3xy^2$ – 2)
3. (a) 2 (x + 4) (b) 3 (a – 3) (c) 5 (a^2 + 3) (d) 5pqr (2p + 37) (e) 14x (1 – 2x) (f) a(6b – 1) (g) (x^2 + 3x + 4) (h) 4a ($2a^2$ – 4a + 1) (i) 4x (x – $3xy^2$ – 2 (j) (a – b) (x^2

$+ y^2$) (k) (a– b) (x + y) (i) (a – b) ($x^2 + y^2$) (k) (a – b) (x + y) (l) (x – y((a + b) (m) (+ 1) ($x^2 - y^2$) (n) x (x – y) (1 – y)

EXERCISE–6.5

1. (a) $(a + 7)^2$ (b) 4 $(q + 1)^2$ (c) (a^2 + 1) (a – 1) (d) [{a^2 $(a + b)^2$}] [{2a + b)}] (e) (p + 16) (p – 16) (f) $(3x - 4)^2$ (g) (x + 7) (x – 11) (h) [$(a + b)^2 + b^2$] [(a + 2b) a] (i) 4 (a + 4) (1 – a) (j) ($p^2 - 4q^2$) + 11)($p^2 - 4q^2$ – 11) (k) (3x + 7) (3x – 7) (l) (5 + 2y) (5 – 2y) (m) (2a + b) (2a – b) (n) $\left(x + \frac{1}{6}\right)\left(x - \frac{1}{6}\right)$ (o) $\left(\frac{x}{6} + \frac{y}{6}\right)\left(\frac{x}{6} - \frac{y}{6}\right)$ (p) (5ab + 7xy) (5ab – 7xy) (q) (p + 5q) (q – 5p) (r) (ab^3c^3 + 1) (ab^2c^3 –1)
2. (a) 4 $(a + 2)^2$ (b) a^2 $(a - 2)^2$ (c) 3 $(y^2 - 6)^2$ (d) 10 $(a - b)^2$ (e) 2 (x + 3)^2 (f) 5a $(a - 3)^2$
3. (a) $(5a + 1)^2$ (b) $(a - 2b)^2$ (c) $(6x + 7)^2$ (d) (5x + 9y) (5x – 9y) (e) (11x +1) (11x – 1) (f) [(x + 3y) (x – 3y)]^2 (g) ($7a^3$ – $2b^3$)2 (h) (2 + $3x^2$) (2 – $3x^2$)
4. (a) ($4x^2$ + 20x + 25) (b) $9x^2$ – 6x + 1 (c) $4x^2 + 2x + \frac{1}{4}$ (d) $\frac{x^2}{4} - 2x + 4$

MCQS

1. (c) 2. (b) 3. (d) 4. (c) 5. (a) 6. (c) 7. (b)

EXERCISE–7.1

1. (a) 10 (b) $\frac{-53}{3}$ (c) 22 (d) $\frac{10}{7}$ (e) 3 (f) $\frac{9}{2}$
2. (a) $\frac{-68}{11}$ (b) $\frac{-1}{8}$ (c) – 8 (d) $\frac{-1}{4}$ (e) $\frac{1034}{21}$ (f) 3
3. (a) 3x – 8 = 1; x = 3 (b) 2x + 5 = x + 10; x = 5 (c) $\frac{2x}{3} - 4$ + x = 1, x = 3 (d) $\frac{x}{4} + 11 = \frac{3x}{4}$; 22

EXERCISE–7.2

1. x + 8 = 45
   or, x = 45 – 8
   ∴ = 37
2. 3x + 12 = – 6
   or, 3x = – 6 – 12
   ∴ x = $\frac{-\cancel{18}^{6}}{\cancel{3}} = -6$
3. $\frac{7}{11} - \frac{x}{3} = \frac{24}{55}$
   or, $\frac{-x}{3} = \frac{24}{55} - \frac{7}{11}$
   or, $\frac{-x}{3} = \frac{24 - 35}{55}$
   or, $\frac{-x}{3} = \frac{-11}{55}$
   or, $\cancel{-}x = \frac{\cancel{-11} \times 3}{\cancel{55}_{5}}$
   ∴ x = $\frac{3}{5}$
4. 29 – 7x = 43
   or, – 7x = 43 – 29
   or, – 7x = 14
   or, – x = $\frac{\cancel{14}^{2}}{\cancel{7}}$
   ∴ x = – 2
5. x – 9 = $\frac{21}{5}$
   or, x = $\frac{21}{5} + 9$

or, $x = \frac{21 + 45}{5}$

$\therefore x = \frac{66}{5}$

6. $x + x + 1 + x + 2 + x + 3 = 178$
or, $4x + 6 = 178$
or, $4x = 178 - 6$
or, $4x = 172$
or, $x = \frac{\overset{43}{\cancel{172}}}{\cancel{4}} = 43$
$\therefore x = 43$
Thus, $x + 1 = 43 + 1 = 44$
$x + 2 = 43 + 2 = 45$
$x + 3 = 43 + 3 = 46$

7. Let those numbers are
$x + x + 1 = 85$
or, $2x + 1 = 85$
or, $2x = 85 - 1$
or, $2x = 84$
or, $x = \frac{\cancel{84}^{42}}{\cancel{2}}$
$\therefore x = 42$
$x + 1 = 43$

8. Let those page number
$x + x + 10 = 40$
or, $x + 10 = 40$
or, $2x = 40 - 10$
$2x = 30$
or $x = \frac{\cancel{30}^{15}}{\cancel{2}}$
$\therefore x = 15$
$x + 10 = 25$

9. $x - \frac{x}{3} = 8$
or, $\frac{3x - x}{3} = 8$
or, $\frac{3x}{3} = 8$
or, $2x = 8 \times 3$
or, $x = \frac{\overset{4}{\cancel{8}} \times 3}{\cancel{2}}$
$\therefore x = 12$

10. $x + 2x = 3600000$
or, $3x = 3600000$
or, $x = \frac{\overset{1200000}{\cancel{3600000}}}{\cancel{3}}$
$\therefore x = 120000$
$2x = 2 \times 1200000 = 2400000$

11. $3x + 7 = 31$
or, $3x = 31 - 7$
or, $3x = 24$
$x = \frac{\cancel{24}^{8}}{\cancel{3}}$
$x = 8$

12. Let the smaller number be x. Then the larger number is $x + 5$. Now 5x smaller number = 4 × larger number
$\therefore 5x = 4(x + 5)$
$\therefore 5x = 4x + 20$
or, $5x - 4x = 20$
$\therefore x = 20$
$\therefore x + 5 = 20 + 5 = 25$

13. $x - \frac{\overset{3}{\cancel{9}}}{\cancel{3}} \text{ of } \frac{2}{} = \frac{(x + 6)}{4} = 45$
or, $x - \frac{(x + 6)}{4} = 45 + 6$
or, $\frac{4x - x - 6}{4} = 51$
or, $3x - 6 = 51 \times 4$
or, $3x - 6 = 204$
or, $3x = 204 - 6$
$x = \frac{\cancel{198}^{66}}{3} = 66$

14. 10 p coins = 20,25 p coins = 50
50 p coins = 7

15. 20 p coins = 5
50 p coins = 10
50 p coins = 1

16. $\frac{5}{7}$

17. 12 yrs + 48 yrs.

18. 24, 27, 30 un.

MCQS

1. (c) 2. (d) 3. (c) 4. (b) 5. (b) 6. (c)

EXERCISE–8.1

1. (a) 0.42 (b) $611\frac{1}{9}$ % (c) 900%
2. (a) 125 (b) 40
3. (a) $44\frac{4}{9}$% (b) 80%
4. 25%
5. 1500
6. 810
7. 1466.67
8. Apple = 80, Lemon = 200, Mango = 40
9. 1,60,000
10. 37.5%
11. 18000
12. 13500 `

EXERCISE–8.2

1. Discount = Marked Price – S.P. = 1880 – 1504 = 376

   Rate of discount

   $= \frac{\text{Discount}}{\text{Discount rate}} \times 100$

   $= \frac{376 \times 100}{1880} = 20\ \%$

2. Selling price = Marked price $\times$ $\frac{(100 - \text{discount }\%)}{10} \times 100$

   $= 35000 \times = \frac{(100 - 12\%)}{100}$

   $= 350\cancel{00} \times \frac{88}{1\cancel{00}} =$ ` 30800

3. Selling price = Marked price $\times$ $\frac{(100 - \text{discount }\%)}{10} \times 100$

   $= 35000 \times = \frac{(100 - 12\%)}{100}$

   $= 350\cancel{00} \times \frac{88}{1\cancel{00}} =$ ` 30800

4. Let the price of shoe = ` x

   Discount = `x x $\frac{1\cancel{0}}{1\cancel{00}} = \frac{x}{10}$

   S.P. = $x - \frac{x}{10} = \frac{10x - x}{10}$

   $= \frac{9x}{10}$; Profit 26 %

   CP = $\frac{100 + SP}{100 + 26\%}$

   $\therefore$ Cost = ` $\frac{100}{100 + 26} \times \frac{9x}{10}$

   $= \frac{\overset{5}{\cancel{100}}}{\underset{63}{\cancel{126}}} \times \frac{9x}{1\cancel{0}} = \frac{45x}{63}$

   According to question

   S.P. – C.P. = Profit.

   or, $\frac{9x}{10} - \frac{45x}{63} = 1120$

   or, $\frac{567x - 450x}{630} = 1120$

   or, $\frac{117x}{630} = 1120$

   $x = \frac{1200 \times \overset{70}{\cancel{210}}\ \cancel{630}}{\underset{13}{\cancel{117}\ \cancel{39}}} =$ ` 6461

5. 1848 `
6. 3150
7. 3465
8. 937.50

MCQS

1. (c) 2. (b) 3. (c) 4. (d) 5. (d) 6. (a)
7. (a) 8. (b)

EXERCISE–9.1

1. (a) ` 3770 (b) ` 460 (c) ` 550; ` 3300 (d) ` 192 , ` 9792 (e) ` 10000, ` 11500 (f) ` 1187.50; ` 5967.50 (g) ` 25000, ` 25500 (h) 6 years, ` 7700
2. (a) ` 10800 (b) ` 40800 (c) ` 850

3. ` 6776
4. ` 73
5. ` 11200
6. ` 3310
7. ` 2125
8. (a) ` 112614 (b) ` 10810,94
9. ` 2662, ` 662
10. ` 124.864
11. ` 1576.25
12. ` 1672.72
13. ` 320
14. ` 4082.40

2. (a) $S.I. = \frac{P \times R \times T}{100}$

$= \frac{30000 \times 9 \times 4}{100} = `10800$

(b) Amoung = Principal + S.I.

= 30000 + 10800 = `40800

(c) Monthly Amount

$= \frac{\text{Total Amount}}{\text{Time}} = \frac{40800}{12 \times 4}$

= 850

3. S.I. 5400 $\therefore$ Rate $= \frac{S.I \times 100}{P \times T}$

− 4000

1400

$= \frac{1400 \times 100}{4000 \times 5} = 7\%$

Now, $S.I. = \frac{P \times R \times T}{100}$

$= \frac{5600 \times 7 \times 3}{100} = 1176$

Total amount = 5600 + 1176

= `6776.

4. S.I. = ? Rate = 10%

Time = Jan – 28

Feb – 28

March – 17

73 days

$S.I. = \frac{P \times R \times T}{100}$

$= \frac{3650 \times 10 \times 73}{100 \times 365} = ` 73$

5. $S.I. = \frac{P \times R \times T}{100}$

$840 = \frac{P \times 5 \times 3}{2 \times 100}$

$P \times 5 \times 3 = 2 \times 100 \times 840$

$P = \frac{2 \times 100 \times 840}{5 \times 3} = ` 11200$

6. $C.A. = P\left[\left(1 + \frac{r}{100}\right)^n\right]$

$= 1000\left[\left(1 + \frac{10}{100}\right)^3\right]$

$= 10000\left[\left(\frac{100 + 10}{100}\right)^3\right]$

$= 10000\left(\frac{100}{100}\right)^3$

$= 10000 \times \frac{110}{100} \times \frac{110}{100} \times \frac{110}{100}$

= ` 13310

C.I = A – P = 13310 – 10000

= ` 13310

7. ` 2125
8. 112614 ` & 10810.4 `
9. 2662 ` & 6022 `
10. 124.864 `
11. ` 15776.25
12. 320 `
13. ` 4082.40

EXERCISE–9.2

1. 670 `.510 `
2. 4845.95
3. 3000 `
4. 57.625 `
5. 81 `
6. 50.625 `
7. 12000 `
8. ` 5000
9. 5%
10. 2 yrs.

11. 7% 12. 3

13. $1\frac{1}{2}$ yrs. 14. 8%

EXERCISE–9.3

1. Amount (A) $= P\left(1+\frac{R}{100}\right)^n$

$= 7290\left(1+\frac{8}{100}\right)^2$

$= 7290\left(\frac{100+8}{100}\right)^2$

$= 7290 \times \left(\frac{108}{100}\right)^2$

$= \overset{1454}{\cancel{7270}} \times \frac{\overset{27}{\cancel{108}}}{\underset{5}{\cancel{100}}} \times \frac{\overset{27}{\cancel{108}}}{\underset{25}{\cancel{100}}}$

$= \frac{105966}{125} = `8479.29$

2. (a) 3038.77 (b) 111477.9
3. 1300,632
4. 2 yrs. 5. 3 yrs.
6. 832 `, 583 `
7. $A = P\left(1+\frac{R}{100}\right)^n$

$= 1500\left(1+\frac{6}{100}\right)^{1\frac{1}{2}}$

$= 1500\left(\frac{100+6}{100}\right)\left(\frac{100+3}{100}\right)$

$= 15\cancel{000} \times \frac{\overset{53}{\cancel{106}}}{\underset{2}{\cancel{100}}} \times \frac{103}{100} = 16377$

$= 16377 - 15000 = `\ 1377$

8. 8000 ` 9. 25 `
10. 24000 ` 11. 2 YRS.
12. 2648 ` 13. 7.5 %
14. Principal = ` 15625,
Rate = 16 % annualy
Time (n) = 9 months $= \frac{9}{12}$ year
$= \frac{3}{4}$ year

Amount after 9 months

$= P\left(1+\frac{r}{100}\right)^{4n}$

$= 15625\left(1+\frac{16}{100}\right)^{4\times\frac{3}{\cancel{4}}}$

$= 15625 \times \left(\frac{116}{100}\right)^3$

$= .015625 \times 116 \times 116 \times 116$

$= `\ 24389$

MCQS

1. (a) 2. (b) 3. (a) 4. (a) 5. (c) 6. (a) 7. (d)

EXERCISE–10.1

1. No 2. Do it yourself.
3. 16000 4. 4
5. 35 6. 376
7. 6`, 9`, 12`, 15`, 18`, 21`
8. 30 9. 181.25
10. 57.60` 11. 336
12. 437kg 13. 6 Days.
14. 45 overs. 15. 21 days.

EXERCISE–10.2

1. Do it yourself. 2. Do it yourself.
3. 40 days 4. 36 days
5. 16 weeks 6. 20 man
7. 44 cows 8. 300 soldiers
9. 35 days. 10. 72 km/hr.

EXERCISE–10.3

1. $\therefore$ Rekha completes $\frac{1}{20}$ Part is 1 day.

Rekha completes 1 Part in $1 \times \frac{20}{1} = 20$ days Ans.

2. Ravi can do a piece of work in 8 days.

$\therefore$ Ravi's one day work $= \frac{1}{8}$

Dushyant can do the savne make is 10 days.

$\therefore$ Dushyant's one day work $= \frac{1}{10}$

In one day, (Ravi + Dushyant's) work $= \frac{1}{8} + \frac{1}{10} = \frac{5+4}{40} = \frac{9}{40}$

$\therefore$ Both will finish the work in $\frac{40}{9} = 4\frac{4}{9}$ days.

3. Ravi can do a piece of work in 8 days.

$\therefore$ Ravi's one day work $= \frac{1}{8}$

Dushyant can do the savne make is 10 days.

$\therefore$ Dushyant's one day work $= \frac{1}{10}$

In one day, (Ravi + Dushyant's) work $= \frac{1}{8} + \frac{1}{10} = \frac{5+4}{40} = \frac{9}{40}$

$\therefore$ Both will finish the work in $\frac{40}{9} = 4\frac{4}{9}$ days.

4. Jyoti and Dhani one day work $= \frac{1}{6}$

Or, Dhani's one day work $= \frac{1}{6}$

Thus $\frac{1}{6} - \frac{1}{9} = \frac{3-2}{18} = \frac{1}{18}$

$\therefore$ Jyoti's alone work = 18 days.

5. 12 days
6. 4320 `
7. $4\frac{4}{5}$ days
8. 15 days
9. 96 minutes
10. 4 guests
11. 48 days
12. $7\frac{1}{2}$ hours.

EXERCISE–10.4

1. (a) 7.5 m/s (b) 108 km/h
2. 10 m/s
3. 12 km/h
4. 960000 m
5. 54 km/h
6. 5 m/s
7. 1 m/s
8. 1110 KM
9. 180 M
10. 8 hours
11. 30 m/s
12. 81 km/h, 28 seconds

MCQS

1. (d) 2. (d) 3. (c) 4. (a) 5. (a) 6. (c)

EXERCISE–11.1

1. (a) 110°
2. 72°, 72°, 72°, 144°
3. 60°, 120°, 120°, 60,° 120°
4. 90° each.
5. 80° each.
6. 180°
7. 115°
8. Do it yourself.
9. (a) 36°, 72°, 180°, 144° (b) 60°, 60°, 90°, 150. (c) 45°, 75°, 105°, 135°.
10. Do yourself.

EXERCISE–11.2

1. 28 cm
2. 4 cm, & 8cm,
3. 6 cm, 14 cm
4. 140°, 40°, 140°.
5. 75°, 105°,
6. $\angle BCD + \angle DAB = 135$, $\angle CDA = 25$ & $\angle DAB = 90°$
7. Do it yourself.
8. Do it yourself.
9. Do it yourself.
10. 16 cm
11. 24 cm
12.
13. 70° each
14. 5 cm.

17. (a) T (b) F (c) T (d) T (e) F (f) T (g) T

MCQS

1. (d) 2. (d) 3. (a) 4. (b) 5. (a)

EXERCISE–12.1

1. Do it yourself.

EXERCISE–12.2

1. Do it yourself.

MCQS

1. (c) 2. (b) 3. (b) 4. (d)

EXERCISE–13.1

1. (a) (i) Front (ii) Top (iii) Side (b) (i) Top (ii) Front (iii) Side (c) (i) top (ii) Front (iii) Side (d) (i) Front (ii) Side (iii) Top (e) (i) Top (ii) Front (iii) Side (f) (i) Front (ii) top (iii) Side
2. (a) (iv) (b) (i) (c) (ii) (d) (iii)

EXERCISE–13.2

1. (a) Triaugulam (b) Square pyramid (c) Hexagonal prism (d) Cube (e) Cuboid (f) Triangulam prism
2. to 6 Do it yourself.
7. Do ti yourself.

MCQS

1. (b) 2. (b) 3. (a) 4. (d) 5. (c) 6. (d) 7. (d)

EXERCISE–14.1

1. 65 cm^2 2. 4 cm
3. 10 m 4. 10 m & 20 cm
5. 5 cm & 15 6. 24 cm
7. 6.876 cm^2 8. 3432 cm^2

EXERCISE–14.2

1. 72 cm^2 2. 4950 m^2
3. 74400 m^2 4. 24.60 m^2
5. 180 cm^2
6. (a) 100.272 cm^2 (b) 93.528 cm^2
7. (a) 77.247 cm (b) 120.7 cm^2
8. 30.625 m^2
9. 114.8 cm^2

EXERCISE–14.3

1. (a) 84 m^3 (b) 168 m^3 (c) 6 cm^3
2. (a) 421.88 cm^3 (b) 54.37 m^3 (c) 79507 mm^3
3. 17.98 m^3
4. 5 cm
5. 5 cm
6. 33.12 kg
7. 432 cubes
8. 0.08 mm
9. 4500 m^3
10. 1.5 m
11. 3960 cm^3, 33.66 kg.
12. 9 cm

EXERCISE–14.4

1. 665.28 cm^3
2. 49.28 m
3. 1540 m^3
4. 693 m3
5. 3852 kl
6. 385 cm^3
7. 4949.5 cm
8. 4826.25 g

EXERCISE–14.5

1. 381.6 cm^3
2. 376 cm^3
3. (a) 216 cm^2 (b) 67.36 cm^2 (c) 8.64 m^2 (d) 3174 cm^2
4. 18 cm^2
5. 16558.50`
6. 9 cm
7. 480`
8. 343.2 m^2
9. 370 cm^2
10. 21128 `

EXERCISE–14.6

1. 2380 cm^3
2. 660 cm^2
3. 2.31 m^2
4. 152 cm^3
5. 152–60 m^3
6. 739.2 cm^3
7. 9504 `
8. 75.663 m^3, 28.32 `
9. 9.281.60 m^3, 28.32 `
10. 2640 `
12. 51.15 `

MCQS

1. (a) 2. (a) 3. (d) 4. (b) 5. (b) 6. (b) 7. (b)

EXERCISE–15.1

Do it yourself.

EXERCISE–15.2

Do it yourself.

MCQS

1. (c) 2. (b) 3. (a) 4. (a) 5. (a) 6. (b)

EXERCISE–16.1

1.

Marks	Tally	Prequency
10 – 15	|	1
15 – 20	||	2
20 – 25	||	2
25 – 30	||	2
30 – 35	|||	3
35 – 40	𝍸 |	6
40 – 45	||	2
45 – 50	𝍸 ||	7

2.

Class-interval	Tally marks	Frequency
40 – 50	𝍸 ||	7
50 – 60	𝍸 ||	7
60 – 70	||||	4
70 – 80	||||	4
80 – 90	||	2
90 – 100	|	1

3.

Class-interval	Tally marks	Frequency
900 – 910	||||	3
910 – 920	|	1
920 – 930	|	1
930 – 940	𝍸	5
940 – 950	𝍸 ||	7
950 – 960	|	1
960 – 970	|||	3
970 – 980	|	1
980 – 990	||	2
990 – 1000	𝍸 |	6

4. (a) 50 (b) 5 (c) 60 (d) 47.5 and 57.5 (e) 5

EXERCISE–16.2

1. (a) The bar graph shows the result percentage of a certain school in 5 different years. (b) 201. (c) 2014 (d) 84%
2. (a) The bar graph in general gives information about he number of toffees sold by a shop on each day of a certain week. (b) Sunday (c) Wednesday (d) Monday Thursday (e) 540
3. (a) The bar graph shows the production of warches of a factory from 2001 to 2006. (b) 30 Million tonnes. (c) 2005 (d) Equal number of watches were manufactured in both years and 20 millions tonnes more production in 2005. (e) Increasing.

EXERCISE–16.3

1. Do it yourself.
2. Do it yourself.
3. Do it yourself.
4. Do it yourself.
5. (a) 3200 (b) 15 – 20 (c) 10 – 15

EXERCISE–16.4

1. Do it yourself.
2. Do it yourself.
3. Do it yourself.
4. Do it yourself.
5. (a) Medical-4729, HR-5551, IT-7401, Others-617, Engineering-2262 (b) IT Sector (c) other sector
6. (a) Bihar (b) 33,000 people (c) 24,000 people (d) Punjab, 15,000 people
7. (a) ` 16200 (b) ` 1575 (c) ` 3600 (d) cricket (e) football

EXERCISE–16.5

1. (a) HH, HT, TH TT (b) HHH, HHT, THH, HTT, THT, TTH, TTT (c) HHHH, HHHT, HHTH, HHTT, HTHH, HTHT, HTTH, HTTT, THHH, THHT, THTH, THTT, TTHH, THHT, TTTH, TTTT.
2. (1, 1), (1, 2), ... (1, 6), (2, 1) (2, 2), ... (2, 6), ... (6, 1) (6, 2), ..., (6, 6)
3. $\frac{2}{7}$ 4. $\frac{4}{9}$
5. (a) $\frac{4}{10}$ 2 $\frac{2}{5}$ (b) $\frac{5}{10} = \frac{1}{2}$ c. $\frac{3}{10}$
6. $\frac{35}{36}$
7. (a) $\frac{2}{9}$ (b) $\frac{5}{6}$ (c) $\frac{11}{18}$ (d) $\frac{1}{3}$
8. (a) $\frac{1}{2}$ (b) $\frac{1}{2}$ (c) $\frac{1}{4}$ (d) $\frac{9}{26}$ (e) $\frac{3}{13}$ (f) $\frac{1}{52}$

MCQS

1. (a) (ii) (b) (i) (c) (i)
2. (a) (i) (b) (ii) (c) (iv) (d) (iii) (e) (ii)
3. d 4. a 5. c
6. a 7. a