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SOLUTION
MAGICAL MATHS

5

1. Revision

Exercise 1.1

1. Express the following in words :
   (i) Eight lakh forty three thousand two hundred seventeen.
   (ii) Five lakh seventy two thousand two hundred fourteen.
   (iii) Six lakh forty six thousand six hundred thirty two.
   (iv) Two lakh two thousand six hundred sixty six.
   (v) Nine lakh thirty one thousand three hundred sixteen.
   (vi) Seven lakh eighty eight thousand five hundred thirty two.
   (vii) Five lakh eighty three thousand one hundred sixty one.
   (viii) Seven lakh forty four thousand one hundred thirty three.
2. Express the following in figures :

(i) 400052	(ii) 731615	(iii) 10721	(iv) 850366
(v) 938003	(vi) 93620	(vii) 804003	(viii) 241015

3. Write the place value of coloured digit :

(i) 600	(ii) 7000	(iii) 80000	(iv) 50000
(v) 8000	(vi) 500	(vii) 500000	(viii) 3000000

4. Write the :

(i) 10000	(ii) 9999999	(iii) 10000000	(iv) 99999

5. Expand the following :
   (i) $700000 + 20000 + 4000 + 500 + 80 + 0$
   (ii) $800000 + 70000 + 5000 + 500 + 60 + 3$
   (iii) $100000 + 60000 + 2000 + 100 + 30 + 1$
   (iv) $900000 + 30000 + 5000 + 700 + 40 + 8$
   (v) $900000 + 50000 + 7000 + 300 + 10 + 3$
   (vi) $600000 + 50000 + 7000 + 300 + 50 + 0$
   (vii) $800000 + 80000 + 1000 + 100 + 10 + 3$

(viii) 400000 + 10000 + 6000 + 500 + 10 + 2

(ix) 400000 + 60000 + 4000 + 800 + 90 + 0

6. Write in short form :

(i) 651058 (ii) 703622 (iii) 980631 (iv) 826815

(v) 400508 (vi) 980008 (vii) 300503 (viii) 790051

(ix) 540036

7. Write the greatest 6-digit number that can be formed with the digits 4, 6, 4, 8, 3 and 0.
Ans. 864430

8. Write the smallest 6-digit number that can be formed with the digits 6, 3, 7, 3, 2 and 0.
Ans. 203367

9. Arrange the following in ascending order :

(i) 401538, 425781, 485369, 540278 (ii) 125473, 536897, 953684, 963241

(iii) 469201, 553691, 654783, 856930 (iv) 245385, 352418, 658240, 785682

(v) 235411, 254360, 365897, 472517

10. Arrange the following in descending order :

(i) 754823, 723501, 578962, 501246 (ii) 925436, 658246, 523983, 258301

(iii) 893472, 658072, 563289, 352487 (iv) 697360, 642013, 465755, 205835

(v) 632049, 453690, 354207, 153697

11. Add :

(i)
$$\begin{array}{r} 621321 \\ 532017 \\ +\ 425367 \\ \hline 1578705 \end{array}$$

(ii)
$$\begin{array}{r} 425367 \\ 122446 \\ +\ 313140 \\ \hline 860953 \end{array}$$

(iii)
$$\begin{array}{r} 53206 \\ 251130 \\ +\ 520869 \\ \hline 825205 \end{array}$$

(iv)
$$\begin{array}{r} 163143 \\ 528563 \\ +\ 151311 \\ \hline 843017 \end{array}$$

(v)
$$\begin{array}{r} 251130 \\ 162013 \\ +\ 456011 \\ \hline 869154 \end{array}$$

(vi)
$$\begin{array}{r} 793431 \\ 125130 \\ +\ 179854 \\ \hline 1098415 \end{array}$$

12. Subtract :

(i)
$$\begin{array}{r} 875113 \\ -\ 251102 \\ \hline 624011 \end{array}$$

(ii)
$$\begin{array}{r} 481556 \\ -\ 153566 \\ \hline 327990 \end{array}$$

(iii)
$$\begin{array}{r} 662113 \\ -\ 355150 \\ \hline 306963 \end{array}$$

(iv)
$$\begin{array}{r} 965423 \\ -\ 531170 \\ \hline 434253 \end{array}$$

(v)
$$\begin{array}{r} 856321 \\ -\ 385763 \\ \hline 470558 \end{array}$$

(vi)
$$\begin{array}{r} 556205 \\ -\ 331179 \\ \hline 225026 \end{array}$$

13. Find the product :

(i)
$$\begin{array}{r} 425 \\ \times 34 \\ \hline 1700 \\ 1275\times \\ \hline 14450 \end{array}$$

(ii)
$$\begin{array}{r} 400 \\ \times 900 \\ \hline 000 \\ 000\times \\ 3600\times\times \\ \hline 360000 \end{array}$$

(iii)
$$\begin{array}{r} 637 \\ \times 55 \\ \hline 3185 \\ 3185\times \\ \hline 35035 \end{array}$$

(iv)
$$\begin{array}{r} 231 \\ \times 55 \\ \hline 1155 \\ 1155\times \\ \hline 12705 \end{array}$$

(v)
$$\begin{array}{r} 420 \\ \times 17 \\ \hline 2940 \\ 420\times \\ \hline 7140 \end{array}$$

(vi)
$$\begin{array}{r} 735 \\ \times 44 \\ \hline 2940 \\ 2940\times \\ \hline 32340 \end{array}$$

(vii)
$$\begin{array}{r} 942 \\ \times 13 \\ \hline 2826 \\ 942\times \\ \hline 12246 \end{array}$$

(vii)
$$\begin{array}{r} 330 \\ \times 17 \\ \hline 2310 \\ 330\times \\ \hline 5610 \end{array}$$

14. Divide the following and verify your answer :

(i)
$$\begin{array}{r|l} 23 & 964321 \\ \cline{2-2} & 41927 \\ \hline 92 & \\ \hline 44 & \\ 23 & \\ \hline 213 & \\ 207 & \\ \hline 62 & \\ 46 & \\ \hline 161 & \\ 161 & \\ \hline \times & \end{array}$$

Q = 41927
R = 0

Dividend = Divisor × Quotient+Remainder
= 23 × 41927 + 0
= 964321

(ii)
$$\begin{array}{r|l} 19 & 416513 \\ \cline{2-2} & 21921 \\ \hline 38 & \\ \hline 36 & \\ 19 & \\ \hline 175 & \\ 171 & \\ \hline 41 & \\ 38 & \\ \hline 33 & \\ 19 & \\ \hline 14 & \end{array}$$

Q = 21921
R = 14

Dividend = Divisor × Quotient + Remainder
= 19 × 21921 + 14
= 416513

(iii)
$$\begin{array}{r|l} 18 & 358753 \\ \cline{2-2} & 19930 \\ \hline 18 & \\ \hline 178 & \\ 162 & \\ \hline 167 & \\ 162 & \\ \hline 55 & \\ 54 & \\ \hline 13 & \end{array}$$

Q = 19930
R = 13

Dividend = Divisor × Quotient+Remainder
= 18 × 19930 + 13
= 358753

(iv)
$$\begin{array}{r|l} 26 & 701318 \\ \cline{2-2} & 26973 \\ \hline 52 & \\ \hline 181 & \\ 156 & \\ \hline 253 & \\ 234 & \\ \hline 191 & \\ 182 & \\ \hline 98 & \\ 78 & \\ \hline 20 & \end{array}$$

Q = 26923
R = 20

Dividend = Divisor × Quotient + Remainder
= 26 × 26973 + 20
= 701318

(v) $34\overline{)685237}\,(20154$

68
52
34
183
170
137
136
1

Q = 20154
R = 1

Dividend = Divisor × Quotient+Remainder
= 34 × 20154 + 1
= 685237

(vi) $32\overline{)853370}\,(26667$

64
213
192
213
192
217
192
250
224
26

Q = 26667
R = 26

Dividend = Divisor × Quotient + Remainder
= 32 × 26667 + 26
= 853370

(vii) $23\overline{)543916}\,(23648$

46
83
69
149
138
111
92
196
184
12

Q = 23648
R = 12

Dividend = Divisor × Quotient+Remainder
= 23 × 23648 + 12
= 543916

(vii) $46\overline{)816134}\,(17742$

46
356
322
341
322
193
184
94
92
2

Q = 17742
R = 2

Dividend = Divisor × Quotient + Remainder
= 46 × 17742 + 2
= 816134

15. Without actual division, say whether the following statements are true or false :
(i) True (ii) False (iii) False (iv) True
(v) False (vi) True (vii) True

16. (i) $5\frac{4}{3}+5\frac{4}{6}-4\frac{4}{5}=\frac{19}{3}+\frac{34}{6}-\frac{24}{5}=\frac{38+34}{6}-\frac{24}{5}$

$=\frac{72}{6}-\frac{24}{5}=\frac{360-144}{30}=\frac{216}{30}$ **Ans.**

(ii) $5\frac{5}{4}+3\frac{3}{9}-4\frac{6}{6}=\frac{25}{4}+\frac{30}{9}-\frac{30}{6}=\frac{225+120}{36}-\frac{30}{6}$

$=\frac{345}{36}-\frac{30}{6}=\frac{345-180}{36}=\frac{165}{36}$ **Ans.**

(iii) $7\frac{4}{6}+2\frac{3}{4}-4\frac{2}{2}=\frac{46}{4}+\frac{11}{4}-\frac{10}{2}=\frac{46+11}{4}-\frac{10}{2}$

$=\frac{57}{4}-\frac{10}{2}=\frac{57-20}{4}=\frac{37}{4}$ **Ans.**

(iv) $1\frac{1}{8}+5\frac{2}{7}-4\frac{1}{3}+1\frac{5}{5}-7\frac{1}{3}=\frac{9}{8}+\frac{37}{7}-\frac{13}{3}+\frac{10}{5}-\frac{22}{3}$

$=\frac{9}{8}+\frac{37}{7}+\frac{10}{5}-\frac{13}{3}-\frac{22}{3}$

$$= \frac{9}{8} + \frac{37}{7} + \frac{2}{1} - \left(\frac{13}{3} + \frac{22}{3}\right)$$

$$= \frac{63 + 296 + 112}{56} - \frac{13 + 22}{3} = \frac{471}{56} - \frac{35}{3} = \frac{1413 - 1960}{168} = \frac{547}{168}$$

(v) $3\frac{2}{2} + 2\frac{4}{8} - 2\frac{5}{5} + 7\frac{1}{9} - 5\frac{1}{7} = \frac{8}{2} + \frac{20}{8} - \frac{15}{5} + \frac{64}{9} - \frac{36}{7}$

$$= \frac{8}{2} + \frac{20}{8} + \frac{64}{9} - \left(\frac{15}{5} + \frac{36}{7}\right)$$

$$= \frac{288 + 180 + 512}{72} - \left(\frac{3}{1} + \frac{36}{7}\right)$$

$$= \frac{980}{72} - \frac{21 + 36}{7} = \frac{980}{72} - \frac{57}{7}$$

$$= \frac{6860 - 4104}{504} = \frac{2756}{504}$$

(vi) $7\frac{3}{6} + 4\frac{5}{5} - 5\frac{1}{4} = \frac{45}{6} + \frac{25}{5} - \frac{21}{4}$

$$= \frac{95}{6} - \frac{21}{4}$$

$$= \frac{190 - 63}{12} = \frac{127}{12}$$

(vii) $1\frac{1}{8} + 6\frac{1}{3} - 3\frac{2}{4} - 7\frac{1}{2} = \frac{9}{8} + \frac{19}{3} - \frac{14}{2} - \frac{15}{2}$

$$= \frac{27 + 152}{24} - \frac{14}{2} - \frac{15}{2} = \frac{179}{24} - \frac{14}{2} - \frac{15}{2}$$

$$= \frac{179 - 168 - 180}{24} = \frac{179 - 348}{24} = -\frac{169}{24}$$

(viii) $2\frac{1}{10} + 4\frac{3}{9} - 3\frac{6}{10} - 10\frac{3}{5} = \frac{21}{10} + \frac{39}{9} - \frac{36}{10} - \frac{53}{5}$

$$= \frac{189 + 390}{90} - \frac{36}{10} - \frac{53}{5} = \frac{579}{90} - \frac{36}{10} - \frac{53}{5}$$

$$= \frac{579 - 324 - 1590}{90} = \frac{579 - 954}{90} = -\frac{375}{90} = -\frac{25}{6} = -4\frac{1}{6}$$

17. (i) $\frac{1}{8}$ (ii) 9 (iii) $\frac{6}{5}$ (iv) $\frac{20}{16}$

(v) $\frac{19}{17}$ (vi) $\frac{6}{4} + \frac{6}{3}$ (vii) $\frac{21}{13} + \frac{21}{15}$ (viii) $\frac{16}{20} + \frac{16}{30}$

18. (i) $\frac{12}{25} \square \frac{18}{36}$

$\Rightarrow \frac{12}{25} \square \frac{1}{2}$

$\Rightarrow \frac{12}{25} \times \frac{1}{2} \square \frac{1}{2} \times \frac{25}{25}$

$\Rightarrow \frac{24}{50} \boxed{<} \frac{25}{50}$

$\Rightarrow \frac{12}{25} < \frac{18}{36}$

(ii) $\frac{1}{6} \square \frac{3}{7}$

$\Rightarrow \frac{1}{6} \times \frac{7}{7} \square \frac{31}{7} \times \frac{6}{6}$

$\Rightarrow \frac{7}{42} \boxed{<} \frac{18}{42}$

$\Rightarrow \frac{1}{6} < \frac{3}{7}$

(iii) $\frac{3}{4} \square \frac{35}{40}$

$\Rightarrow \frac{3}{4} \square \frac{7}{8}$

$\Rightarrow \frac{3}{4} \times \frac{2}{2} \square \frac{7}{8}$

$\Rightarrow \frac{6}{8} \boxed{<} \frac{7}{8}$

$\Rightarrow \frac{3}{4} < \frac{35}{40}$

(iv) $\frac{7}{9} \square \frac{12}{14}$

$\Rightarrow \frac{7}{9} \square \frac{6}{7}$

$\Rightarrow \frac{7}{9} \times \frac{7}{7} \square \frac{6}{7} \times \frac{9}{9}$

$\Rightarrow \frac{7}{9} < \frac{12}{14}$

(v) $\frac{9}{5} \square \frac{5}{6}$

$\Rightarrow \frac{9}{5} \times \frac{6}{6} \square \frac{5}{6} \times \frac{5}{5}$

$\Rightarrow \frac{54}{30} \boxed{<} \frac{25}{30}$

$\Rightarrow \frac{9}{5} < \frac{5}{6}$

(vi) $\frac{25}{55} \square \frac{10}{15}$

$\Rightarrow \frac{5}{11} \square \frac{2}{3}$

$\Rightarrow \frac{5}{11} \times \frac{3}{3} \square \frac{2}{3} \times \frac{11}{11}$

$\Rightarrow \frac{25}{55} < \frac{10}{15}$

(vii) $\frac{2}{6} \square \frac{5}{7}$

$\Rightarrow \frac{1}{3} \square \frac{5}{7}$

$\Rightarrow \frac{1}{3} \times \frac{7}{7} \square \frac{5}{7} \times \frac{3}{3}$

$\Rightarrow \frac{7}{21} \boxed{<} \frac{15}{21}$

$\Rightarrow \frac{2}{6} < \frac{5}{7}$

(viii) $\frac{13}{19} \square \frac{22}{25}$

$\Rightarrow \frac{13}{19} \times \frac{25}{25} \square \frac{22}{25} \times \frac{19}{19}$

$\Rightarrow \frac{325}{475} \boxed{<} \frac{418}{475}$

$\Rightarrow \frac{13}{19} < \frac{22}{25}$

19. Write in ascending order :

(i) $\frac{2}{5}, \frac{1}{4}, \frac{3}{6}, \frac{8}{9}$

LCM of 5, 4, 6, 9 = 180

$\therefore$ Fractions are $\frac{72}{180}, \frac{45}{180}, \frac{90}{180}, \frac{160}{180}$

$\therefore$ Their ascending order is

$\frac{45}{180}, \frac{72}{180}, \frac{90}{180}, \frac{160}{180}$

i.e., $\frac{1}{4}, \frac{2}{5}, \frac{2}{6}, \frac{8}{9}$

(ii) $\frac{1}{4}, \frac{6}{7}, \frac{1}{5}, \frac{2}{7}$

LCM of 4, 7, 5, 7 = 140

$\therefore$ Fractions are $\frac{35}{140}, \frac{120}{140}, \frac{28}{140}, \frac{40}{140}$

$\therefore$ Their ascending order is $\frac{28}{140}, \frac{35}{140}, \frac{40}{140}, \frac{120}{140}$

i.e., $\frac{1}{5}, \frac{1}{4}, \frac{2}{7}, \frac{6}{7}$

(ii) $\frac{5}{8}, \frac{3}{8}, \frac{1}{2}, \frac{2}{9}$

LCMof 8, 8, 2, 9 = 72

$\therefore$ Fractions are $\frac{45}{72}, \frac{27}{72}, \frac{36}{72}, \frac{16}{72}$

$\therefore$ Their ascending order is $\frac{16}{72}, \frac{27}{72}, \frac{36}{72}, \frac{45}{72}$ *i.e.,* $\frac{2}{9}, \frac{3}{8}, \frac{1}{2}, \frac{5}{8}$

(iv) $\frac{2}{6}, \frac{1}{7}, \frac{4}{3}, \frac{8}{9}$

LCM of 6, 7, 3, 9 = 126

$\therefore$ Fractions are $\frac{42}{126}, \frac{18}{126}, \frac{168}{126}, \frac{112}{126}$

$\therefore$ Their ascending order is $\frac{18}{126}, \frac{42}{126}, \frac{112}{126}, \frac{168}{126}$

i.e., $\frac{1}{7}, \frac{2}{6}, \frac{8}{9}, \frac{4}{3}$

(v) $\frac{5}{7}, \frac{6}{8}, \frac{4}{9}, \frac{3}{7}$

$\therefore$ LCM of 7, 8, 9, 7 = 504

$\therefore$ Fractions are $\frac{360}{504}, \frac{378}{504}, \frac{224}{504}, \frac{216}{504}$

$\therefore$ Their ascending order is $\frac{216}{504}, \frac{224}{504}, \frac{360}{504}, \frac{378}{504}$

i.e., $\frac{3}{7}, \frac{4}{9}, \frac{5}{7}, \frac{6}{8}$

20. Write in descending order :

(i) $\frac{3}{20}, \frac{5}{20}, \frac{2}{20}, \frac{1}{20}$ (ii) $\frac{9}{25}, \frac{9}{25}, \frac{4}{25}, \frac{2}{25}$

(iii) $\frac{1}{10}, \frac{4}{16}, \frac{9}{25}, \frac{2}{14}$

LCM of 10, 16, 25, 14 = 2800

$\therefore$ Fractions are $\frac{280}{2800}, \frac{700}{2800}, \frac{1008}{2800}, \frac{400}{2800}$

$\therefore$ Their descending order is $\frac{1008}{2800}, \frac{700}{2800}, \frac{400}{2800}, \frac{280}{2800}$

i.e., $\frac{9}{25}, \frac{4}{16}, \frac{2}{14}, \frac{1}{10}$

(iv) $\frac{1}{5}, \frac{2}{6}, \frac{4}{9}, \frac{3}{7}$

LCM of 5, 6, 9, 7 = 630

$\therefore$ Fractions are $\frac{126}{630}, \frac{210}{630}, \frac{280}{630}, \frac{270}{630}$

$\therefore$ Their descending order is $\frac{280}{630}, \frac{270}{630}, \frac{210}{630}, \frac{126}{630}$

i.e., $\frac{4}{9}, \frac{3}{7}, \frac{2}{6}, \frac{1}{5}$

21. Add :

(i) $\frac{5}{8}+\frac{1}{8} \Rightarrow \frac{5+1}{8}=\frac{6}{8}=\frac{3}{4}$ (ii) $\frac{2}{5}+\frac{9}{25}=\frac{10+9}{25}=\frac{19}{25}$

(iii) $\frac{17}{40}+\frac{5}{8}=\frac{17+25}{40}=\frac{42}{40}=\frac{21}{20}$ (iv) $\frac{25}{10}+\frac{11}{30}=\frac{75+11}{30}=\frac{86}{30}=\frac{43}{15}$

(v) $\frac{9}{17}+\frac{6}{51}=\frac{27+6}{51}=\frac{33}{6}=\frac{11}{2}$ (vi) $3\frac{3}{9}+\frac{6}{18}=\frac{30}{9}+\frac{6}{18}=\frac{60+6}{18}=\frac{66}{18}=\frac{11}{3}$

(vii) $\frac{12}{24}+\frac{14}{48}=\frac{24+14}{48}=\frac{38}{48}=\frac{19}{24}$ (viii) $\frac{12}{36}+\frac{3}{6}=\frac{12+18}{36}=\frac{30}{36}=\frac{15}{16}$

22. Find the LCM of the following :

(i) $12=2\times2\times3,\ 20=2\times2\times5,\ 36=2\times2\times3\times3,\ 64=2\times2\times2\times2\times2\times2$

LCM $=2\times2\times2\times2\times2\times2\times3\times3\times5=2880$

(ii) $9=3\times3,\ 27=3\times3\times3,\ 36=2\times2\times3\times3$

LCM $=3\times3\times3\times2\times2=108$

(iii) $3=3\times1,\ 4=2\times2,\ 6=2\times3$

LCM $=3\times2\times2=12$

(iv) $14=2\times7,\ 7=7\times1,\ 35=7\times5$, LCM $=2\times5\times7=70$

(v) $6=2\times3,\ 4=2\times2,\ 8=2\times2\times2,\ 10=2\times5$;

LCM $=2\times2\times2\times3\times5=120$

(vi) $28=2\times2\times7,\ 32=2\times2\times2\times2\times2,\ 84=2\times2\times3\times7$

LCM $=2\times2\times2\times2\times2\times3\times7=672$

(vii) $12=2\times2\times3,\ 25=5\times5,\ 48=2\times2\times2\times2\times3,\ 60=2\times2\times5\times3$

LCM $=2\times2\times2\times2\times3\times5\times5=1200$

(viii) $2=2\times1,\ 10=2\times5,\ 16=2\times2\times2\times2$, LCM $=2\times2\times2\times2\times5=80$

(ix) $66=11\times2\times3,\ 88=11\times2\times2\times2$, LCM $=11\times2\times2\times2\times3=264$

(x) $16=2\times2\times2\times2,\ 20=2\times2\times5,\ 28=2\times2\times7$, LCM $=2\times2\times2\times2\times5\times7=560$

23. Find the HCF of the following :

(i) 40, 80

2	40
2	20
2	10
5	5
	1

2	80
2	40
2	20
2	10
5	5
	1

$40=2\times2\times2\times5$

$80=2\times2\times2\times5\times2$

HCF $=2\times2\times2\times5=40$

(ii) 64, 80, 16

2	64
2	32
2	16
2	8
2	4
2	2
	1

2	80
2	40
2	20
2	10
5	5
	1

2	16
2	8
2	4
2	2
	1

$64=2\times2\times2\times2\times2\times2$

$80=2\times2\times2\times2\times5$

$16=2\times2\times2\times2$

HCF $=2\times2\times2\times2=16$

(iii)

2	30
5	15
3	3
	1

3	45
3	15
5	5
	1

$30 = 2 \times 3 \times 5$
$45 = 3 \times 3 \times 5$
HCF $= 3 \times 5 = 15$

(iv)

5	25
5	5
	1

5	50
5	10
2	2
	1

$25 = 5 \times 5$
$50 = 5 \times 5 \times 2$
HCF $= 5 \times 5 = 25$

(v)

7	7
	1

7	49
7	7
1	1

2	98
7	49
	7
	1

$7 = 7 \times 1$
$49 = 7 \times 7$
$98 = 2 \times 7 \times 7$
HCF $= 7$

(vi)

11	22
2	2
	1

11	66
2	6
3	3
	1

$22 = 11 \times 2$
$66 = 11 \times 2 \times 3$
HCF $= 11 \times 2 = 22$

(vii)

5	30
2	6
3	3
	1

5	35
7	7
	1

$30 = 5 \times 2 \times 3$
$35 = 5 \times 7$
HCF $= 7$

(viii)

3	3
	1

2	2
	1

2	6
3	3
	1

$2 = 2 \times 1$
$3 = 3 \times 1$
$6 = 2 \times 3 \times 1$
HCF $= 1$

(ix)

17	17
	1

17	51
3	3
	1

$17 = 17 \times 1$
$51 = 17 \times 3$
HCF $= 17$

(x)

2	4
2	2
	1

2	12
2	6
3	3
	1

2	20
2	10
5	5
	1

$4 = 2 \times 2$
$12 = 2 \times 2 \times 3$
$20 = 2 \times 2 \times 5$
HCF $= 2 \times 2 = 4$

24. Add :
(i) 36.131 (ii 940.79 (iii) 224.573 (iv) 148.249
(v) 35.66

25. Subtract :
(i) 39 (ii) 395.56 (iii) 21.094 (iv) 129.95
(v) 442.03 (vi) 393.34 (vii) 468.11 (viii) 202.15
(ix) 464.13 (x) 223.23

26. For ₹24 we can buy = 1 purse
$\therefore$ ₹5760 we can buy $= \frac{5760 \times 1}{24}$
$= 240$ purses
So, we can buy 240 purses.

27. The price of 1 pencil box = ₹ 25.50

$$\text{No. of pencils boxes} = \begin{array}{r} 25.50 \\ \times 64 \\ \hline 10200 \\ 15300\times \\ \hline \end{array}$$

Price of 64 such pencil box = ₹ 1632.00

28. Length of first piece of cloth $= \frac{9}{5}$ m

Length of second piece $= \frac{20}{5}$ m

Length of third piece $= 4\frac{4}{6} = \frac{28}{6}$ m

$\therefore$ Total the length of the cloth $= \frac{9}{5} + \frac{20}{5} + \frac{28}{6} = \frac{54 + 120 + 140}{30} = \frac{314}{30}$

$= \frac{314}{30} = \frac{157}{15} = 10\frac{7}{15}$ m

29.

$$\begin{array}{rr} \text{Quantity of sugar in the bag} = & 10.50 \text{ kg} \\ \text{Quantity of sugar sold} = & -\ 4.50 \text{ kg} \\ \hline \therefore\ \text{Quantity of remained in the bag} = & 6.00 \text{ kg} \\ \hline \end{array}$$

30. Ram reached school at = 7 : 25 am

$$\text{The time will be after 2 hours} = \begin{array}{r} 7:25 \\ +\ 2:00 \\ \hline 9:25 \\ \hline \end{array}$$

31. (i) $\frac{16}{48} - \frac{4}{16} = \frac{16-12}{48} = \frac{4}{48} = \frac{1}{12}$ (ii) $\frac{2}{5} - \frac{7}{25} = \frac{10-7}{25} = \frac{3}{25}$

(iii) $\frac{15}{17} - \frac{9}{17} = \frac{15-9}{17} = \frac{6}{17}$ (iv) $4\frac{1}{4} - 3\frac{2}{2} = \frac{17}{4} - \frac{8}{2} = \frac{17-16}{4} = \frac{1}{4}$

(v) $\frac{18}{20} - \frac{1}{2} = \frac{18-10}{20} = \frac{8}{20} = \frac{2}{5}$ (vi) $2\frac{1}{15} - 1\frac{2}{5} = \frac{31}{15} - \frac{7}{5} = \frac{31-21}{15} = \frac{10}{15} = \frac{2}{3}$

(vii) $\frac{25}{30} - \frac{10}{30} = \frac{25-10}{30} = \frac{15}{30} = \frac{1}{2}$ (viii) $\frac{12}{35} - \frac{7}{70} = \frac{24-7}{70} = \frac{17}{70}$

32. $\angle A = \angle B = \angle C = 60°$

Sum of angles $= 60° + 60° + 60° = 180°$

33. $\angle A = \angle B = \angle C = \angle D = 90°$

Sum of angles of rectangle $= 90° + 90° + 90° + 90° = 360°$

34. Sum of angles of parallelogram $= \angle A + \angle B + \angle C + \angle D = 360°$

35. (i) 126° (ii) 90° (iii) 28° (iv) 126°

36. (i) $6 + 2 + 2 + 6 + 12 + 6 + 4 + 6 + 12 = 56$ cm

(ii) $8 + 16 + (4 + 2) + (4 + 2) + (4 + 2) + (4 + 2) = 48$ cm

(iii) $6 + 14 + 6 + 14 = 40$ cm

(iv) $(2 + 4) + (2 + 4) + (2 + 4) + (2 + 4) + (2 + 4) + (2 + 4) = 36$ cm

(v) $6 + 2 + 4 + 3 + 4 + 2 + 6 + 7 = 34$ cm

(vi) $16 + 12 + 13 + 12 = 53$ cm

2. Number and Numeration

Exercise 2.1

1. (i) Thirty five lakh twenty three thousand one hundred twenty five.
   (ii) Fourteen crore five lakh sixty eight thousand one hundred seven.
   (iii) Three crore thirty five lakh fifty eight thousand three hundred.
   (iv) Forty five crore seventy lakh ninety thousand two hundred forty.
   (v) Ninety crore seventy lakh fifty nine thousand six hundred sixty five.
   (vi) Ninety eight crore eighty one lakh seventeen thousand two hundred eighty six.
2. (i) One hundred twenty three million five hundred forty six thousand one hundred five.
   (ii) Forty five million two hundred five thousand three hundred.
   (iii) Fourteen million seven hundred eighty two thousand five hundred thirty.
   (iv) Three hundred seventy four million six thousand thirty five.
   (v) Six hundred fifty million sixty five.
   (vi) Five hundred twenty three million one hundred three thousand five hundred twenty nine.
3. (i) 9999999, 1000000 (ii) 99999999, 10000000 (iii) 999999999, 100000000
4. 3807754, 3808754, 3809754, 3810754
5. 22322222, 22422222, 22522222
6. 231023512, 241023512, 251023512
7. (i) 4283276, 4293276, 4303276 (ii) 70909010, 71009010, 71109010
   (iii) 272010400, 262010400, 252010400

Exercise 2.2

1. Compare the following numbers are put > or < in the blanks :
   (i) > (ii) > (iii) < (iv) > (v) >
   (vi) > (vii) > (viii) > (ix) < (x) <
2. (i) 30428817, 56194510, 60235710, 74316210, 89590788
   (ii) 6038318, 7987689, 27169237, 30728510, 50643701
   (iii) 9037848, 10071896, 10101070, 12345716, 91537964
   (iv) 2789988, 307697, 12965784, 21345603, 129654503
3. (i) 999999902, 900000000, 778899222, 778899221
   (ii) 987654322, 987654321, 987654312, 987654311
   (iii) 202002302, 100515602, 20547946, 2537928
   (iv) 223456989, 213456789, 123456789, 113456789
4. Greatest 76543210, Smallest 10234567
5. 10000234
6. Greatest 999996420, Smallest 200000469

3 Roman Numbers

Exercise 3.1

1. Write the Hindu-Arabic numerals for the following Roman Numerals :
   (i) 9 (ii) 21 (iii) 26 (iv) 31 (v) 15
   (vi) 60 (vii) 19 (viii) 29
2. (i) VI + VI = XII (ii) XVI – VI = X
   (iii) X – VIII = II (iv) XXXIII + X = XLIII
3. Write the correct symbol >, < or = :
   (i) < (ii) = (iii) < (iv) > (v) <
   (vi) < (vii) < (viii) > (ix) < (x) =
4. Which of the following are meaningless?
   (i) XXXX (ii) VV (iii) IIX (iv) VX (v) XIIV
5. Fill in the blanks with >, < or = :
   (i) > (ii) > (iii) > (iv) < (v) =
   (vi) = (vii) > (viii) = (ix) = (x) <
6. (i) XCVII (ii) XLVIII (iii) XXXVII
   (iv) LXXVI (v) XLIV (vi) LVI
   (vii) XXIII (viii) XCV (ix) LXXXI
   (x) LXVIII (xi) XXV (xii) IX
   (xiii)C (xiv) LXXXVIII (xv) LXIX
   (xvi)XXXIII (xvii) LXXII (xviii) LXXXIV
7. Fill in the blanks :
   (i) Roman (ii) Seven (iii) 500 (iv) Larger
8. Write the predecessor of :
   (i) XXIX (ii) XXXII (iii) XVI (iv) IV
   (v) XXIV (vi) XXXIX
9. Write the successor of :
   (i) XXVIII (ii) XXVI (iii) XIII (iv) XXXVII
   (v) XIX (vi) XXI

4. Prime and Composite Numbers

Exercise 4.1

1. (i) 97 (ii) 7, 11, 13, 17, 19, 23
   (iii) 31, 37, 41, 47, 53, 59 (iv) 71, 73, 79, 83, 89, 97
   (v) 21, 22, 24, 25, 26, 27, 28, 30, 32, 33, 34, 35, 36, 38, 39, 40, 42, 44, 45, 46, 48, 49
   (vi) 81, 82, 84, 85, 86, 87, 88, 90, 91, 92, 93, 94, 95, 96, 98, 99

2. (i) $11 = 5 + 3 + 3$ (ii) $23 = 17 + 3 + 3$ (iii) $47 = 41 + 3 + 3$
   (iv) $59 = 53 + 3 + 3$ (v) $41 = 31 + 5 + 5$
3. 2, 11, 19, 47, 53, 73, 97
4. (i) 5 (ii) 29 (iii) 47 (iv) 67 (v) 79 (vi) 83 (vii) 97
5. (i) 22 (ii) 27 (iii) 48 (iv) 68 (v) 86 (vi) 93 (vii) 100
6. 5.
7. 17, 71, and 37, 73

Exercise 4.2

1. (i) 2005 (iii) 2045 (v) 2899
2. (i) 1220 (ii) 540 (v) 1000 (vi) 3145
3. (i) 212 (ii) 3456 (v) 3332
4. 1354 and 4056 both are divisible by 2.
   Hence 2 is a factor of 1354 and 4056.
   Their sum = 1354 + 4056 = 5410, which is also divisible by 2.
5. 6234 and 1234 both are divisible by 2.
   Their difference = 6234 – 1234 = 5000, which is also divisible by 2.
6. 3096 is divisible by 4, since the number formed by its tens and ones digits, *i.e.,* 96, is divisible by 4.
7. 124 is divisible by 2, since there is an even number, *i.e.,* 4, in its ones place.
   124 is also divisible by 4, since the number formed by its tens and ones digits, *i.e.,* 24 is divisible by 4.
8. 4414 is divisible by 2, since there is an even number in its ones place.
   4414 is not divisible by 4, since the number formed by its tens and ones digits, *i.e.,* 14, is not divisible by 4.
9. The number formed by the tens and ones digits of 1526 is 26, which is not divisible by 4. To make it divisible by 4, we should add the smallest number 2 so that it becomes 26 + 2 = 28 which is divisible by 4.
   So, the required smallest number = 2.
10. (i) 9999
    Sum of its digits = 9 + 9 + 9 + 9 = 36, which is divisible by 3.
    So, 9999 is divisible by 3.
    (ii) 2501
    Sum of its digits = 2 + 5 + 0 + 1 = 8, which is not divisible by 3.
    So, 2501 is not divisible by 3.
    (iii) 6552
    Sum of its digits = 6 + 5 + 5 + 2 = 18, which is divisible by 3.
    So, 6552 is divisible by 3.
    (iv) 6002
    Sum of its digits = 6 + 0 + 0 + 2 = 8, which is not divisible by 3.
    So, 6002 is not divisible by 3.

11. The smallest number to put in the ones place is 3, then sum of its digits = 3 + 3 + 3 = 9, which is divisible by 3.

So, the required smallest number = 3

12. The number that comes just after 677 which is divisible by 3 is 678, since sum of its digits = 6 + 7 + 8 = 21, which is divisible by 3.

So, the required number = 678.

5. HCF and LCM

Exercise 5.1

1. (i)

2 | 12
2 | 6
3 | 3
1

2 | 16
2 | 8
2 | 4
2 | 2
1

$12 = 2 \times 2 \times 3$
$16 = 2 \times 2 \times 2 \times 2$
CF = 2, 2
$\therefore$ HCF = $2 \times 2 = 4$

(ii)

3 | 21
7 | 7
1

2 | 28
2 | 14
7 | 7
1

$21 = 3 \times 7$
$28 = 2 \times 2 \times 7$
CF = 7
$\therefore$ HCF = 7

(iii)

2 | 40
2 | 20
2 | 10
5 | 5
1

2 | 54
3 | 27
3 | 9
3 | 3
1

$40 = 2 \times 2 \times 2 \times 5$
$54 = 2 \times 3 \times 3 \times 3$
CF = 2
$\therefore$ HCF = 2

(iv)

2 | 72
2 | 36
2 | 18
3 | 9
3 | 3
1

2 | 180
2 | 90
5 | 45
3 | 9
3 | 3
1

2 | 190
5 | 95
19 | 19
1

$72 = 2 \times 2 \times 2 \times 3 \times 3$
$180 = 2 \times 2 \times 5 \times 3 \times 3$
$190 = 2 \times 5 \times 19$
$\therefore$ HCF = 2

(v)

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

2 | 312
2 | 156
2 | 78
3 | 39
13 | 13
1

$144 = 2 \times 2 \times 2 \times 2 \times 3 \times 3$
$312 = 2 \times 2 \times 2 \times 3 \times 13$
CF = 2, 2, 2, 3
$\therefore$ HCF = $2 \times 2 \times 2 \times 3 = 24$

(vi)

5 | 25
5 | 5
1

5 | 30
2 | 6
3 | 3
1

5 | 35
7 | 7
1

$25 = 5 \times 5$
$30 = 5 \times 2 \times 3$
$35 = 5 \times 7$
CF = 5
$\therefore$ HCF = 5

2. (i)

2 | 18
3 | 9
3 | 3
1

2 | 30
3 | 15
5 | 5
1

$18 = 2 \times 3 \times 3$
$30 = 2 \times 3 \times 5$
CF = 2, 3
$\therefore$ HCF = $2 \times 3 = 6$

(ii)

2 | 78
3 | 39
13 | 13
1

2 | 126
3 | 63
3 | 21
7 | 7
1

$78 = 2 \times 3 \times 13$
$126 = 2 \times 3 \times 3 \times 7$
CF = 2, 3
$\therefore$ HCF = $2 \times 3 = 6$

(iii)

2 | 92
2 | 46
23 | 23
1

2 | 138
3 | 69
23 | 23
1

$92 = 2 \times 2 \times 23$
$138 = 2 \times 3 \times 23$
CF = 2, 23
$\therefore$ HCF = $2 \times 23 = 46$

(iv)

2	18
3	9
3	3
	1

2	54
3	27
3	9
3	3
	1

3	81
3	27
3	9
3	3
	1

$18 = 2 \times 3 \times 3$
$54 = 2 \times 3 \times 3 \times 3$
$81 = 3 \times 3 \times 3 \times 3$
CF = 3, 3
HCF = $3 \times 3 = 9$

(v)

2	112
2	56
2	28
2	14
7	7
	1

2	140
2	70
5	35
7	7
	1

2	168
2	84
2	42
3	21
7	7
	1

$112 = 2 \times 2 \times 2 \times 2 \times 7$
$140 = 2 \times 2 \times 5 \times 7$
$168 = 2 \times 2 \times 2 \times 3 \times 7$
CF = 2, 2, 7
HCF = $2 \times 2 \times 7 = 28$

(vi)

3	405
3	135
3	45
3	15
5	5
	1

3	783
3	261
3	87
29	29
	1

3	513
3	171
3	57
19	19
	1

$405 = 3 \times 3 \times 3 \times 3 \times 5$
$783 = 3 \times 3 \times 3 \times 29$
$513 = 3 \times 3 \times 3 \times 19$
CF = 3, 3, 3
HCF = $3 \times 3 \times 3 = 27$

3. (i) 180 and 450.

$$\begin{array}{r} 180\overline{)\,450\,(2} \\ \underline{360} \\ 90\overline{)\,180\,(2} \\ \underline{180} \\ \times \end{array}$$

$\therefore$ HCF = 90

(ii) 144 and 249.

$$\begin{array}{r} 144\overline{)\,249\,(1} \\ \underline{144} \\ 105\overline{)\,144\,(1} \\ \underline{105} \\ 39\overline{)\,105\,(2} \\ \underline{78} \\ 27\overline{)\,39\,(1} \\ \underline{27} \\ 12\overline{)\,27\,(2} \\ \underline{24} \\ 3\overline{)\,12\,(4} \\ \underline{12} \\ \times \end{array}$$

$\therefore$ HCF = 3

(iii) 224, 536, 412

$$\begin{array}{r} 412\overline{)\,536\,(1} \\ \underline{412} \\ 124\overline{)\,412\,(3} \\ \underline{372} \\ 40\overline{)\,124\,(3} \\ \underline{120} \\ 4\overline{)\,40\,(10} \\ \underline{40} \\ \times \end{array}$$

$$\begin{array}{r} 4\overline{)\,224\,(56} \\ \underline{20} \\ 24 \\ \underline{24} \\ \times \end{array}$$

The HCF of 224, 536, 412 is 4.

(iv) 180, 140, 300

$180\overline{)300}\,(1$; 180 ; $120\overline{)180}\,(1$; 120 ; $60\overline{)120}\,(2$; 120 ; $\times$

$60\overline{)140}\,(3$; 120 ; $20\overline{)60}\,(3$; 60 ; $\times$

The HCF of 180, 140, 300 is 20.

(v) 891, 1215, and 1377

$1215\overline{)1377}\,(1$; 1215 ; $162\overline{)1215}\,(7$; 1134 ; $81\overline{)162}\,(2$; 162 ; $\times$

$81\overline{)891}\,(1$; 81 ; $81\overline{)81}\,(1$; 81 ; $\times$

The HCF of 891, 1215 and 1377 is 81.

(vi) 441, 630, 945

$630\overline{)945}\,(1$; 630 ; $315\overline{)630}\,(2$; 630 ; $\times$

$315\overline{)441}\,(1$; 315 ; $126\overline{)315}\,(2$; 252 ; $63\overline{)126}\,(2$; 126 ; $\times$

The HCF of 441, 630, and 945 is 63.

Exercise 5.2

1. (i)

2	22
11	11
	1

2	36
2	18
3	9
3	3
	1

$22 = 2 \times 11$
$36 = 2 \times 2 \times 3 \times 3$
$\therefore$ LCM $= 2 \times 2 \times 3 \times 3 \times 11$
$= 396$

(ii)

2	18
3	9
3	3
	1

3	27
3	9
3	3
	1

$18 = 2 \times 3 \times 3$
$27 = 3 \times 3 \times 3$
$\therefore$ LCM $= 2 \times 3 \times 3 \times 3$
$= 54$

(iii)

2	76
2	38
19	19
	1

2	84
2	42
3	21
7	7
	1

$76 = 2 \times 2 \times 19$
$84 = 2 \times 2 \times 3 \times 7$
$\therefore$ LCM $= 2 \times 2 \times 3 \times 7 \times 19$
$= 1596$

(iv)

3	27
3	9
3	3
	1

2	54
3	27
3	9
3	3
	1

2	90
5	45
3	9
3	3
	1

$27 = 3 \times 3 \times 3$
$54 = 2 \times 3 \times 3 \times 3$
$90 = 2 \times 5 \times 3 \times 3$
$\therefore$ LCM $= 2 \times 3 \times 3 \times 3 \times 5$
$= 270$

(v)

5	85
17	17
	1

3	57
19	19
	1

2	34
17	17
	1

$85 = 5 \times 17$
$57 = 19 \times 3$
$34 = 17 \times 2$
$\therefore$ LCM $= 3 \times 5 \times 2 \times 17 \times 19$
$= 9690$

(vi)

2	28
2	14
7	7
	1

2	56
2	28
2	14
7	7
	1

2	84
2	42
3	21
7	7
	1

$28 = 2 \times 2 \times 7$
$56 = 2 \times 2 \times 2 \times 7$
$84 = 2 \times 2 \times 3 \times 7$
LCM $= 2 \times 2 \times 2 \times 7 \times 3$
$= 168$

2. (i)

3	138, 207
3	46, 69
23	46, 23
2	2, 1
	1, 1

$\therefore$ LCM $= 3 \times 3 \times 2 \times 23$
$= 414$

(ii)

2	204, 255
2	102, 255
3	51, 255
17	17, 85
5	1, 5
	1, 1

$\therefore$ LCM $= 2 \times 2 \times 3 \times 17 \times 5$
$= 1020$

(iii)

2	576, 720
2	288, 360
2	144, 180
2	72, 90
2	36, 45
2	18, 45
9	9, 45
5	1, 5
	1, 1

$\therefore$ LCM $= 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 9 \times 5$
$= 2880$

(iv)

2	360, 168, 432
2	180, 84, 216
2	90, 42, 108
3	45, 21, 54
3	15, 7, 18
3	5, 7, 6
	5, 7, 2

$\therefore$ LCM $= 2 \times 2 \times 2 \times 2 \times 3 \times 3 \times 3 \times 5 \times 7$
$= 15120$

(v)

2	256, 288, 96
2	128, 144, 48
2	64, 72, 24
2	32, 36, 12
2	16, 18, 6
2	8, 9, 3
2	4, 9, 3
3	2, 9, 3
	2, 3, 1

$\therefore$ LCM $= 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 3 \times 3$
$= 2304$

(vi)

3	459, 527, 1173
3	153, 527, 391
17	51, 527, 391
	3, 31, 23

$\therefore$ LCM $= 3 \times 3 \times 3 \times 17 \times 31 \times 23$
$= 327267$

Exercise 5.3

1. Product of two numbers = 13110
Their HCF = 19
$\therefore$ Their LCM $= \dfrac{\text{Product of two number}}{\text{Their HCF}}$
$= \dfrac{13110}{19} = 690$
So, LCM is 690 **Ans.**

2. Their HCF $= \dfrac{\text{Product of two numbers}}{\text{Their LCF}}$
$= \dfrac{1566 \times 2030}{54810} = \dfrac{1566}{27}$
$= 58$

3. First number = 325
Second number = 450
LCM of these two numbers = 5850
HCF of the two numbers $= \dfrac{\text{First number} \times \text{Second number}}{\text{LCM of the two numbers}}$
$= \dfrac{325 \times 450}{5850} = \dfrac{325}{13} = 25$
So, HCF of the two numbers = 25

4. LCM of the two numbers = 2176
HCF of the two number = 2
One number is 128
$\therefore$ Other number $= \dfrac{\text{HCF} \times \text{LCM}}{\text{One number}} = \dfrac{2 \times 2176}{128} = \dfrac{2 \times 17}{1} = 34$
So, other number is = 34

5. Intervals of traffic signals = 7 sec, 12 sec, 14 sec

2	7, 12, 14
2	7, 6, 7
7	7, 3, 7
	1, 3, 1

$\therefore$ Their LCM $= 2 \times 2 \times 7 \times 3 = 84$ sec
Hence the signals will glow together after 84 seconds.

6. First piece of timber = 42 m
Second number of timber = 49 m
Third number of timber = 63 m

7	42
2	6
3	3
	1

7	49
7	7
	1

7	63
3	9
3	3
	1

$42 = 7 \times 2 \times 3$
$49 = 7 \times 7$
$63 = 7 \times 3 \times 3$
CF = 7

$\therefore$ HCF = 7

So, the greatest length of each plank is 7 m.

7. Product of two numbers = 917504
HCF of the two numbers = 128

$\therefore$ LCM of the numbers = $\frac{\text{Product of the numbers}}{\text{HCF of the numbers}}$

$= \frac{917504}{128} = 7168$

LCM of the number is 7168.

8. Cost of books sold on Monday = ₹ 180
Cost of books sold on Tuesday = ₹ 144
Cost of books sold on Wednesday = ₹ 108
Cost of books sold on Thursday = ₹ 216

2	180
2	90
5	45
3	9
3	3
	1

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

2	108
2	54
3	27
3	9
3	3
	1

2	216
2	108
2	54
3	27
3	9
3	3
	1

$180 = 2 \times 2 \times 5 \times 3 \times 3$
$144 = 2 \times 2 \times 2 \times 2 \times 3 \times 3$
$108 = 2 \times 2 \times 3 \times 3 \times 3$
$216 = 2 \times 2 \times 2 \times 3 \times 3 \times 3$
CF = 2, 2, 3, 3
$\therefore$ HCF = $2 \times 2 \times 3 \times 3 = 36$

Maximum price of each book = ₹ 36
No. of books sold on Thursday = 216 ÷ 36 = 6

6. Operations Involving Large Numbers

Exercise 6.1

1. (i)
$$\begin{array}{r} 5306514 \\ 1685346 \\ +\ 8311314 \\ \hline 15303174 \end{array}$$

(ii)
$$\begin{array}{r} 16532015 \\ 32514 \\ +\ 89131636 \\ \hline 105696165 \end{array}$$

(iii)
$$\begin{array}{r} 567893281 \\ 8310131 \\ +\ 405512961 \\ \hline 981716373 \end{array}$$

(iv)
$$\begin{array}{r} 73421 \\ 908913456 \\ +\ 53201516 \\ \hline 962188393 \end{array}$$

(v)
$$\begin{array}{r} 425603219 \\ 456789212 \\ +\ 32145072 \\ \hline 914537503 \end{array}$$

(vi)
$$\begin{array}{r} 502013149 \\ 16530114 \\ +\ 24051 \\ \hline 518567314 \end{array}$$

(vii)
$$\begin{array}{r} 706044551 \\ 425091 \\ +\ 10001301 \\ \hline 716470943 \end{array}$$

2. (i)
$$\begin{array}{r} 1000000 \\ 100000 \\ 10000 \\ 1000 \\ 100 \\ 10 \\ +\ 1 \\ \hline 1111111 \end{array}$$

(ii)
$$\begin{array}{r} 88800808 \\ 8888008 \\ 888111 \\ 8000 \\ +\ 88 \\ \hline 98585015 \end{array}$$

3. (i)
$$\begin{array}{r} {\scriptstyle 1\ \ 1} \\ 34524 \\ 12413 \\ +\ 22356 \\ \hline 69293 \end{array}$$

(ii)
$$\begin{array}{r} {\scriptstyle 1\ 1\ 1\ 1\ 1} \\ 14355 \\ 65423 \\ +\ 07567 \\ \hline 87345 \end{array}$$

Exercise 6.2

1. No. of students who got first division in exam = 6044256
Students who got students second division in exam = 543261
Students who got students third division in exam = 1256787
Students failed in the exam = + 249864
Students appeared in the exam = 8094168

2. No. of votes secured by the first candidate = 56789
No. of votes secured by the second candidate = 46215
No. of votes secured by the third candidate = + 50408
Total number of votes polled = 153412

3. Largest 8 digit number = 99999999
Smallest 6 digit number = + 100000
∴ Their sum = 100099999

4. The smaller number = 5670898
Difference of the two numbers = + 245678
∴ Other number is = 5916576

5. No. of first item produced = 432150
No. of second item produced = 4567213
No. of third item in produced = + 594205
Total items produced by the factory = 5593568

6. No. of man employees in the company = 6732251
No. of woman employees in the company = + 4658932
Total number of employee in a company = 11391183

7. Population of A city = 3567898
Population of B city = 4567892
Population of C city = +47892451
Total population of the cities = 56028241

8. The expenditure of the company in 2015 = 5678553
The expenditure of the company in 2016 = 2090051
The expenditure of the company in 2017 = + 4534008
Total expenditure of the company in three years = 12302612

Exercise 6.3

1. (i) 6214051 − 3453031 = 2761020 (ii) 70201351 − 33521685 = 36679666 (iii) 40892408 − 32561250 = 8331158 (iv) 6789242 − 5678928 = 1110314

2. (i) 33781015 − 12567891 = 21213124 (ii) 56303010 − 2889412 = 53413598 (iii) 325692421 − 204089240 = 121603181 (iv) 70607820 − 56874113 = 13733707

3. (i) 80538 − 45016 = 35522 (ii) 755638 − 322659 = 432979 (iii) 65463 − 29527 = 35936

Exercise 6.4

1. Sum of the six numbers = 56688296
Sum of the five numbers = − 48932508
So, sixth number = 7755788

2. First number = 92478526
Second number = − 54326789
So, their difference = 38151737

3. Dipanshu has money = ₹56467928
He invested in shares = − ₹43214890
Now, Dipanshu had amount = ₹13253038

4. The population of the city = 40892516
Number of female members = − 18423419
So, the number of male members = 22469097

5. No. of student in the school = 7800
No. of students absent on a rainy day = − 890
So, no. of students present = 6910

6. Smallest six digit number = 100000
Smallest five digit number = − 10000
So, their difference = 90000

7. Sum of two numbers = 25892520
One numbers = − 432979
The number to be added = 25459541

8. Total children of the city = 34567892
Children who go to school = – 24325168
Children who do not go to school = 10242724

9. Largest five digit number = 99999
Largest four digit number = – 9999
So, their difference = 90000

Exercise 6.5

1. (i)
62503 × 220
00000
125006×
125006××
13750660

(ii)
89134 × 1389
802206
713072×
267402××
89134×××
123807126

(iii)
302018 × 5221
302018
604036×
604036××
1510090×××
1576835978

(iv)
54439 × 5630
00000
163317×
326634××
272195×××
306491570

(v)
50461 × 3261
50461
302766×
100922××
151383×××
164553321

(vi)
89139 × 4213
267417
89139×
178278××
356556×××
375542607

(vii)
87211 × 6320
00000
174422×
261633××
523266×××
551173520

(viii)
19324 × 8942
38648
77296×
173916××
154592×××
172795208

(ix)
40582 × 4341
40582
162328×
121746××
162328×××
176166462

(x)
1620 × 1620
0000
3240×
9720××
1620×××
2624400

(xi)
37101 × 4321
37101
74202×
111303××
148404×××
160313421

(xii)
45166 × 5043
135498
180664×
00000××
225830×××
227772138

Exercise 6.6

1. The cost of the shirt = ₹ 1850.50
No. of shirts = × 621
1850.50
370100×
1110300××
So, the cost of 621 shirts = ₹ 1149160.50

2. No. of tyres produced by the factory in one day = 8030
No. of days in August = 8030
× 31
8030
24090×
So, No. of tyres produced in the month of August = 248930

3. No. of hours = 460
Distance travelled by bus in 1 hour = × 54 km
1840
2300×
So, distance travelled by the bus in 460 hours = 24840

4. The weight of a rice bag = 150.180 kg
No. of such rice bags = × 350
000000
750900×
450540××
So, the weight of 350 such rice bags = 52563.000 kg

5. Quantity of petrol sold in a day = 5432
No. of days in a year = × 365
27160
32592×
16296××
So, the petrol pump sells the petrol in a year = 1982680 litres

6. No. of buses = 5311
Passengers a bus can carry = × 84
21244
42488×
So, No. of passengers that can travel in 5311 such buses = 446124

7. Wages of a labourer = ₹ 160
No. of labourers engaged = × 68
1280
960×
Expenditure in a day = ₹ 10880
No. of days in a week = × 7
Expenditure in a week = ₹ 76160

Exercise 6.7

1. (i) $110\overline{)999900(9090}$

990
990
990
×0
0
×

Q = 9090

(ii) $125\overline{)5709750(45678}$

500
709
625
847
750
975
875
1000
1000
×

Q = 45678

(iii) $125\overline{)330625(2645}$

250
806
750
562
500
625
625
×

Q = 2645

(iv) $500\overline{)550000(1100}$

500
500
500
×0
0
×

Q = 1100

2. (i) $320\overline{)987240(3085}$

960
2724
2560
1640
1600
40

Q = 3085
R = 40

(ii) $785\overline{)978908(1247}$

785
1939
1570
3690
3140
5508
5495
13

Q = 1247
R = 13

(iii) $250\overline{)975892(3903}$

750
2258
2250
892
750
122

Q = 3903
R = 122

(iv) $940\overline{)874325(930}$

8460
2832
2820
125

Q = 930
R = 125

(v) $540\overline{)975624(1806}$

540
4356
4320
3624
3240
384

Q = 1806
R = 384

(vi) $390\overline{)25460(65}$

2340
2060
1950
110

Q = 65
R = 110

(vii) $560\overline{)7894087}(14096$

560
2294
2240
5408
5040
3687
3360
327

Q = 14096
R = 327

(viii) $450\overline{)1256289}(2791$

900
3562
3150
4128
4050
789
450
339

Q = 2791
R = 339

3. (i) $952\overline{)25435536}(26718$

1904
6395
5712
6835
6664
1713
952
7616
7616
×

Q = 26718
R = 0

Dividend = Divisor × Quotient + Remainder
= 952 × 26718 + 0
= 25435536

(ii) $452\overline{)146936160}(325080$

1356
1133
904
2296
2260
3616
3616
×

Q = 325080
R = 0

Dividend = Divisor × Quotient + Remainder
= 452 × 325080 + 0
= 146936160

(iii) $125\overline{)5709750}(45678$

500
709
625
847
750
975
875
1000
1000
×

Q = 45678

Dividend = Divisor × Quotient + Remainder
= 125 × 45678 + 0
= 5709750

(iv) $12\overline{)697800}(58150$

60
97
96
18
12
60
60
×

Q = 58150

Dividend = Divisor × Quotient + Remainder
= 12 × 58150
= 697800

(v) $152\overline{)45687248}(300574$

456
872
760
1124
1064
608
608
×

Q = 300574

Dividend = Divisor × Quotient + Remainder
= 152 × 300574 + 0
= 45687248

(vi) $46\overline{)1232800}(26800$

92
312
276
368
368
00
00
×

Q = 26800

Dividend = Divisor × Quotient + Remainder
= 46 × 26800
= 1232800

(vii) $850\overline{)2636700}(3102$

2550
867
850
1700
1700
×

Q = 3102

Dividend = Divisor × Quotient + Remainder
= 850 × 3102 + 0
= 2636700

(viii) $25\overline{)956400}(38256$

75
206
200
64
50
140
125
150
150
×

Q = 38256

Dividend = Divisor × Quotient + Remainder
= 25 × 38256
= 956400

(ix) $184\overline{)7987808}(43412$

736
627
552
758
736
220
184
368
368
×

Q = 43412

Dividend = Divisor × Quotient + Remainder
= 184 × 43412 + 0
= 7987808

(x) $182\overline{)789542572}(4338146$

728
615
546
694
546
1482
1456
265
182
837
728
1092
1092
×

Q = 4338146

Dividend = Divisor × Quotient + Remainder
= 182 × 4338146
= 789542572

Exercise 6.8

1. The product of two numbers = 2733330
   One number is = 2545

$$\begin{array}{r|l} 2545 & 2733330 \\ & 2545 \\ \hline & 18833 \\ & 17815 \\ \hline & 10180 \\ & 10180 \\ \hline & \times \end{array} \quad 1074$$

   So, the other number = 1074

2. The cost of 120 bags of wheat = ₹ 29280

$$\begin{array}{r|l} 120 & 292800 \\ & 240 \\ \hline & 528 \\ & 480 \\ \hline & 280 \\ & 480 \\ \hline & \times \end{array} \quad 2440$$

   So, cost of one bag of wheat = ₹ 2440
   Each bag contains 80 kg wheat.

$$\begin{array}{r|l} 80 & 2440 \\ & 240 \\ \hline & 400 \\ & 400 \\ \hline & \times \end{array} \quad 30.50$$

   Then the cost of one kg = ₹ 30.50

3. No. of apples packed in 182 boxes = 589316

$$\begin{array}{r|l} 182 & 589316 \\ & 546 \\ \hline & 433 \\ & 364 \\ \hline & 691 \\ & 546 \\ \hline & 1456 \\ & 1456 \\ \hline & \times \end{array} \quad 3238$$

   So, No. of apples in each box = 3238

4. The cost of 952 quintals of rice = ₹ 190400

$$\begin{array}{r|l} 952 & 190400 \\ & 1904 \\ \hline & \times 00 \end{array} \quad 200$$

   So, cost of one quintal of rice = ₹ 200.

5. The cost of 152 bikes = ₹ 6840000

$$152\overline{)6840000}(45000$$
$$\underline{608}$$
$$760$$
$$\underline{760}$$
$$\times 000$$

So, cost of one bike = ₹ 45000.

6. Total sale of milk at the rate of ₹ 15 per litre = ₹ 6075900

$$15\overline{)6075900}(405060$$
$$\underline{60}$$
$$75$$
$$\underline{75}$$
$$\times 90$$
$$\underline{90}$$
$$\times 0$$
$$\underline{0}$$
$$\times$$

So, 405060 litre milk was sold by the dairy.

7. 1 minute = 60 seconds

$$60\overline{)54600}(910$$
$$\underline{540}$$
$$60$$
$$\underline{60}$$
$$0$$

So, 910 minutes make 54600 seconds.

8. Greatest number of 8 digit = 99999999
Product of 9 and 8 = $9 \times 8 = 72$

$$72\overline{)99999999}(1388888$$
$$\underline{72}$$
$$279$$
$$\underline{216}$$
$$639$$
$$\underline{576}$$
$$639$$
$$\underline{576}$$
$$639$$
$$\underline{576}$$
$$639$$
$$\underline{576}$$
$$639$$
$$\underline{576}$$
$$63$$

Q = 1388888
R = 63

9. Monthly salary paid to 579 employees = ₹ 2170671

$$
\begin{array}{r|l}
579 & 2170671 \;\big(\; 3749 \\
 & \underline{1737} \\
 & \quad 4336 \\
 & \underline{4053} \\
 & \quad\quad 2837 \\
 & \quad\quad \underline{2316} \\
 & \quad\quad\quad 5211 \\
 & \quad\quad\quad \underline{5211} \\
 & \quad\quad\quad\quad \times
\end{array}
$$

10. Money divided 227 member of club = 9075914

$$
\begin{array}{r|l}
227 & 9075914 \;\big(\; 39982 \\
 & \underline{681} \\
 & \quad 2265 \\
 & \underline{2043} \\
 & \quad\quad 2229 \\
 & \quad\quad \underline{2043} \\
 & \quad\quad\quad 1861 \\
 & \quad\quad\quad \underline{1816} \\
 & \quad\quad\quad\quad 454 \\
 & \quad\quad\quad\quad \underline{454} \\
 & \quad\quad\quad\quad\quad \times
\end{array}
$$

So each member gets = ₹ 39982

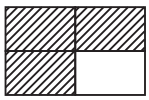
7. Fractional Number

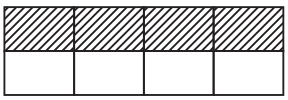
Exercise 7.1

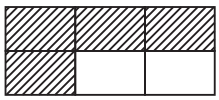
1. (i) Numerator = 5, Denominator = 16 (ii) Numerator = 6, Denominator = 7
(iii) Numerator = 4, Denominator = 7 (iv) Numerator = 9, Denominator = 15
(v) Numerator = 13, Denominator = 20 (vi) Numerator = 13, Denominator = 27

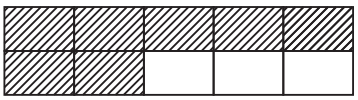
2. (i) Three-sixth (ii) Four-seventh
(iii) Three-ninth (iv) Two-eighth
(v) Five-sixth (vi) Eight-ninth

3. (i) $\frac{2}{4}$ (ii) $\frac{6}{10}$ (iii) $\frac{3}{5}$ (iv) $\frac{3}{8}$

4. (i) 

(ii) 

(iii) 

(iv) 

5. (i) $\frac{1}{4}+\frac{1}{4}+\frac{1}{4}=\frac{1+1+1}{4}=\frac{3}{4}$ (ii) $\frac{1}{6}+\frac{1}{6}+\frac{1}{6}=\frac{1+1+1}{6}=\frac{3}{6}=\frac{1}{2}$

(iii) $\frac{2}{3}+\frac{2}{3}=\frac{2+2}{3}=\frac{4}{3}=1\frac{1}{3}$ (iv) $\frac{1}{7}+\frac{1}{7}+\frac{1}{7}+\frac{1}{7}=\frac{1+1+1+1}{7}=\frac{4}{7}$

6. Fill up the blanks :

(i) Five (ii) One (iii) Three (iv) Two (v) One (vi) Four

7. (i) $\frac{2}{4}, \frac{3}{4}$ (ii) $\frac{2}{6}, \frac{3}{6}, \frac{4}{6}, \frac{5}{6}$

8. Do yourself.

Exercise 7.2

1. (i) $\frac{5}{12}, \frac{9}{24}, \frac{15}{36}, \frac{20}{48}$

On simplification, we get

$\Rightarrow \frac{5}{12}, \frac{3}{8}, \frac{5}{12}, \frac{5}{12}$ So, $\frac{3}{8}$ *i.e.,* $\frac{9}{24}$ is not equivalent.

(ii) $\frac{1}{5}, \frac{2}{9}, \frac{3}{15}, \frac{7}{35}$

On simplification, we get

$\Rightarrow \frac{1}{5}, \frac{2}{9}, \frac{1}{5}, \frac{1}{5}$ So, $\frac{2}{9}$ is not equivalent.

(iii) $\frac{2}{3}, \frac{6}{9}, \frac{5}{11}, \frac{10}{15}$

On simplification, we get

$\Rightarrow \frac{2}{3}, \frac{2}{3}, \frac{5}{11}, \frac{2}{3}$ So, $\frac{5}{11}$ is not equivalent.

(iv) $\frac{3}{10}, \frac{27}{90}, \frac{6}{15}, \frac{30}{100}$

On simplification, we get

$\Rightarrow \frac{3}{10}, \frac{3}{10}, \frac{2}{5}, \frac{3}{10}$ So, $\frac{2}{5}$ *i.e.,* $\frac{6}{15}$ is not equivalent.

(v) $\frac{3}{8}, \frac{2}{5}, \frac{20}{50}, \frac{14}{35}$

On simplification, we get

$\Rightarrow \frac{3}{8}, \frac{2}{5}, \frac{2}{5}, \frac{2}{5}$ So, $\frac{3}{8}$ is not equivalent.

(vi) $\frac{7}{10}, \frac{14}{20}, \frac{21}{30}, \frac{27}{30}$

On simplification, we get

$\Rightarrow \frac{7}{10}, \frac{7}{10}, \frac{7}{10}, \frac{9}{10}$ So, $\frac{9}{10}$, *i.e.,* $\frac{27}{30}$ is not equivalent.

(vii) $\frac{3}{8}, \frac{2}{5}, \frac{20}{50}, \frac{14}{35}$

On simplification, we get

$\Rightarrow \frac{3}{8}, \frac{2}{5}, \frac{2}{5}, \frac{2}{5}$ So, $\frac{3}{8}$ is not equivalent.

(viii) $\frac{1}{2}, \frac{2}{4}, \frac{5}{10}, \frac{6}{10}$

On simplification, we get

$\Rightarrow \quad \frac{1}{2}, \frac{1}{2}, \frac{1}{2}, \frac{3}{5}$ So, $\frac{3}{5}$ *i.e.,* $\frac{6}{10}$ is not equivalent.

2. (i) $\frac{19}{6}$ (ii) $\frac{13}{2}$ (iii) $\frac{74}{9}$ (iv) $\frac{109}{8}$

   (v) $\frac{87}{10}$ (vi) $\frac{108}{7}$ (vii) $\frac{107}{6}$ (viii) $\frac{101}{4}$

3. (i) $\frac{21}{2} = 10\frac{1}{2}$ (ii) $\frac{23}{6} = 3\frac{5}{6}$ (iii) $\frac{29}{9} = 3\frac{2}{9}$ (iv) $\frac{47}{6} = 7\frac{5}{6}$

   (v) $\frac{50}{17} = 2\frac{16}{17}$ (vi) $\frac{39}{9} = 4\frac{3}{9}$ (vii) $\frac{156}{11} = 14\frac{2}{11}$ (viii) $\frac{45}{2} = 22\frac{1}{2}$

4. (i) $\frac{22}{29}, \frac{13}{19}$ LCM of 29 and $19 = 29 \times 19 = 551$

   $\Rightarrow \quad \frac{418}{551}, \frac{377}{551}$ So, $\frac{22}{29}$ is greater.

   (ii) $\frac{3}{5}, \frac{11}{17}$ LCM of 5 and $17 = 5 \times 17 = 85$

   $\Rightarrow \quad \frac{51}{85}, \frac{55}{85}$ So, $\frac{11}{17}$ is greater.

   (iii) $\frac{17}{45}, \frac{4}{9}$ LCM of 45 and 9 is 45.

   $\Rightarrow \quad \frac{17}{45}, \frac{20}{45}$ So, $\frac{4}{9}$ is greater.

   (iv) $\frac{7}{17}, \frac{2}{5}$ LCM of 17 and 5 is 85.

   $\Rightarrow \quad \frac{35}{85}, \frac{34}{85}$ So, $\frac{7}{17}$ is greater.

   (v) $\frac{19}{37}, \frac{12}{23}$ LCM is 37 and $23 = 37 \times 23 = 851$

   $\Rightarrow \quad \frac{437}{851}, \frac{444}{851}$ So, $\frac{12}{23}$ is greater.

   (vi) $\frac{11}{25}, \frac{3}{7}$ LCM of 25 and $7 = 25 \times 7 = 175$

   $\Rightarrow \quad \frac{77}{175}, \frac{75}{175}$ So, $\frac{11}{25}$ is greater.

   (vii) $\frac{23}{29}, \frac{5}{6}$ LCM of 29 and $6 = 29 \times 6 = 174$

   $\Rightarrow \quad \frac{138}{174}, \frac{145}{174}$ So, $\frac{5}{6}$ is greater.

   (viii) $\frac{1}{3}, \frac{3}{8}$ LCM of 3 and $8 = 3 \times 8 = 24$

   $\Rightarrow \quad \frac{8}{24}, \frac{9}{24}$ So, $\frac{3}{8}$ is greater.

5. (i) $\frac{3}{7}, \frac{2}{5}, \frac{4}{9}$ LCM of 7, 5 and 9 = 315

   $\Rightarrow \quad \frac{135}{315}, \frac{126}{315}, \frac{140}{315}$ So, $\frac{2}{5}$ is the smallest fraction.

(ii) $\frac{2}{7}, \frac{3}{10}, \frac{4}{13}$ LCM of 7, 10 and 13 = $7 \times 10 \times 13 = 910$

$\Rightarrow \frac{260}{910}, \frac{273}{910}, \frac{280}{910}$ So, $\frac{2}{7}$ is the smallest fraction.

(iii) $\frac{1}{4}, \frac{2}{9}, \frac{4}{15}$ LCM of 4, 9 and 15 = 180

$\Rightarrow \frac{45}{180}, \frac{40}{180}, \frac{48}{180}$ So, $\frac{2}{9}$ is the smallest fraction.

(iv) $\frac{3}{4}, \frac{4}{7}, \frac{5}{9}$ LCM of 4, 7 and 9 = $4 \times 7 \times 9 = 252$

$\Rightarrow \frac{189}{252}, \frac{144}{252}, \frac{140}{252}$ So, $\frac{5}{9}$ is the smallest fraction.

(v) $\frac{2}{3}, \frac{4}{13}, \frac{6}{19}$ LCM of 3, 13 and 19 = $3 \times 13 \times 19 = 741$

$\Rightarrow \frac{494}{741}, \frac{228}{741}, \frac{234}{741}$ So, $\frac{4}{13}$ is the smallest fraction.

(vi) $\frac{1}{2}, \frac{2}{5}, \frac{3}{7}$ LCM of 2, 5 and 7 = $2 \times 5 \times 7 = 70$

$\Rightarrow \frac{35}{70}, \frac{28}{70}, \frac{30}{70}$ So, $\frac{2}{5}$ is the smallest fraction.

(vii) $\frac{2}{7}, \frac{3}{11}, \frac{4}{15}$ LCM of 7, 11 and 15 = $7 \times 11 \times 15 = 1155$

$\Rightarrow \frac{330}{1155}, \frac{315}{1155}, \frac{308}{1155}$ So, $\frac{4}{15}$ is the smallest fraction.

(viii) $\frac{1}{5}, \frac{2}{9}, \frac{3}{14}$ LCM of 5, 9 and 14 = $5 \times 9 \times 14 = 630$

$\Rightarrow \frac{126}{630}, \frac{140}{630}, \frac{135}{630}$ So, $\frac{1}{5}$ is the smallest fraction.

6. (i) $\frac{8}{14} = \frac{4}{7}$ (ii) $\frac{18}{22} = \frac{9}{11}$ (iii) $\frac{9}{27} = \frac{1}{3}$ (iv) $\frac{16}{36} = \frac{4}{9}$

(v) $\frac{64}{72} = \frac{8}{9}$ (vi) $\frac{32}{72} = \frac{4}{9}$ (vii) $\frac{72}{126} = \frac{4}{7}$ (viii) $\frac{96}{112} = \frac{6}{7}$

(ix) $\frac{121}{110} = \frac{11}{10}$ (x) $\frac{68}{186} = \frac{34}{93}$ (xi) $\frac{96}{256} = \frac{3}{8}$ (xii) $\frac{176}{192} = \frac{11}{12}$

(xiii) $\frac{175}{15} = \frac{35}{3}$ (xiv) $\frac{200}{312} = \frac{100}{156} = \frac{25}{39}$ (xv) $\frac{210}{280} = \frac{30}{40} = \frac{3}{4}$

(xvi) $\frac{350}{250} = \frac{7}{5}$ (xvii) $\frac{146}{200} = \frac{73}{100}$ (xviii) $\frac{320}{480} = \frac{32}{48} = \frac{2}{3}$

7. $\frac{1}{3}$ of pizza was given to = 3 boys

$\therefore$ The remaining portion $\frac{3}{4}$ will be given to = $\frac{\frac{3}{4} \times 3}{\frac{1}{4}} = 9$ boys

8. (i) $\frac{1}{2}, \frac{2}{4} = \frac{3}{6} = \frac{6}{12}$

9. $\frac{3}{4}$

10. $\frac{2}{4}$

8. Decimals

Exercise 8.1

1. Shaded : 5, 6, 2, 4, Unshaded : 5, 4, 8, 6
2. (i) $\frac{2}{10} = 0.2$ (ii) $\frac{4}{10} = 0.4$
3. Do yourself.

Exercise 8.2

1. (i) 2 (ii) 3 (iii) 3 (iv) 2 (v) 5 (vi) 7
2. (i) 4 tenths = $\frac{4}{10}$ (ii) Four thousandths = $\frac{4}{1000}$
   (iii) 6 tens = 60 (iv) 4 ones
   (v) 6 thousandths = $\frac{6}{1000}$ (vi) 7 tenths = $\frac{7}{10}$
   (vii) 6 tens = 60 (viii) 5 hundredths = $\frac{5}{100}$
   (ix) 6 tens 60 (x) 2 ones 2
   (xi) 9 tenths = $\frac{9}{10}$ (xii) 5 thousandth = $\frac{5}{1000}$
3. (i) Two point five (ii) Thirteen point five
   (iii) Six point seven six nine (iv) Sixty seven point five nine
   (v) Two hundred twenty four point eight
   (vi) One hundred seventy four point four five
   (vii) Zero point two zero
   (viii) One hundred eighty four point seven two four
   (ix) Thirteen point zero two six (x) Twenty two point one four
   (xi) Four point seven five eight (xii) Twenty five point one two five
4. 2.3
5. 89.53

Exercise 8.3

1. (i) $\frac{7}{1000} = 0.007$ (ii) $\frac{4}{10} = 0.4$ (iii) $\frac{148}{1000} = 0.148$ (iv) $\frac{28}{100} = 0.28$
   (v) $\frac{5}{1000} = 0.005$ (vi) $5\frac{8}{100} = \frac{508}{100} = 5.08$ (vii) $\frac{8032}{1000} = 8.032$
   (viii) $15\frac{1}{100} = \frac{1501}{100} = 15.01$
2. (i) $0.74 = \frac{74}{100}$ (ii) $8.04 = 8\frac{4}{100}$ (iii) $3.72 = 3\frac{72}{100}$ (iv) $12.76 = 12\frac{76}{100}$
   (v) $6.007 = 6\frac{7}{1000}$ (vi) $20.012 = 20\frac{12}{1000}$ (vii) $9.04 = 9\frac{4}{100}$
   (viii) $10.005 = 10\frac{5}{1000}$

3. (i) 12.4

Place value form : 12.4 = 1 tens + 2 ones + 4 tenths

Decimal form : 12.4 = 12 + 0.4

Fractional form : $12.4 = 12 + \frac{4}{10}$

(ii) 24.58

Place value form : 24.58 = 2 tens + 4 ones + 5 tenths + 8 hundredths

Decimal form = 20 + 4 + 0.5 + 0.08

Fractional form = $20 + 4 + \frac{5}{10} + \frac{8}{100}$

(iii) 275.36

Place value form : 275.36 = 2 hundred + 7 tens + 5 ones + 3 tenths + 6 hundredths

Decimal from = 200 + 70 + 0.3 + 0.06

Factional from = $200 + 70 + 5 + \frac{3}{10} + \frac{6}{100}$

(iv) 208.24

Place value form : 208.24 = 2 hundred + 0 tens + 8 ones + 2 tenths + 4 hundredths

Decimal form : 200 + 0 + 8 + 0.2 + 0.04

Fractional form = $200 + 0 + 8 + \frac{2}{10} + \frac{4}{100}$

(v) 426.408

Place value form : 426.408 = 4 hundred + 2 tens + 6 ones + 4 tenths + 0 + hundredths + 8 thousandths

Decimal form = 400 + 20 + 6 + 0.4 + 0.00 + 0.008

Fractional form = $400 + 20 + 6 + \frac{4}{10} + \frac{0}{100} + \frac{8}{1000}$

(vi) 345.007

Place value form : 345.007 = 3 hundreds + 4 tens + 5 ones + 0 tenths + 0 hundredths + 7 thousandths

Decimal form = 300 + 40 + 5 + 0.0 + 0.00 + 0.007

Fractional form = $300 + 40 + 5 + \frac{0}{10} + \frac{0}{100} + \frac{7}{1000}$

4. (i) 0.4, 0.38 $\Rightarrow$ 0.40, 0.38 (ii) 1.58, 1.8 $\Rightarrow$ 1.58, 1.80 (iii) 5, 5.984 $\Rightarrow$ 5.000, 5.984

(iv) 6.5, 6.846 $\Rightarrow$ 6.500, 6.846 (v) 18.06, 18.6 $\Rightarrow$ 18.06, 18.60

(vi) 9.745, 9.4 $\Rightarrow$ 9.745, 9.400

5. (i) Ascending : 3.48, 3.8, 4.05, 4.2, Descending : 4.2, 4.05, 3.8, 3.48

(ii) A : 0.77, 1.15, 7.07, D : 7.07, 1.15, 0.77

(iii) A : 6.08, 6.8, 8.06, 8.66, D : 8.66, 8.06, 6.8, 6.08

(iv) A : 0.004, 0.14, 1.04, 1.14, D : 1.14, 1.04, 0.14, 0.004

Exercise 8.4

1. (i)
$$\begin{array}{r} 2.208 \\ +\ 7.060 \\ \hline 9.268 \end{array}$$

(ii)
$$\begin{array}{r} 12.428 \\ 4.250 \\ +\ 5.050 \\ \hline 21.728 \end{array}$$

(iii)
$$\begin{array}{r} 12.004 \\ +\ 23.360 \\ \hline 35.364 \end{array}$$

(iv)
$$\begin{array}{r} 204.800 \\ 15.420 \\ +\ 0.742 \\ \hline 220.962 \end{array}$$

2. (i) 7.26 cm + 3.40 cm + 2.80 cm = 13.46 cm

(ii) 0.454 + 5.650 + 2.600 = 8.704

(iii) 5.845 + 4.240 + 2.500 = 12.585

(iv) 12.046 + 6.450 + 4.800 = 23.296

3. (i) 2.985 + 4.055 = 7.040

(ii) 5.576 + 4.626 = 10.202

(iii) 67.118 + 40.786 = 107.904

4. Match the following :

(i) e (ii) c (iii) a (iv) f (v) d (vi) b

5. (i) The thickness of one book = 2.50 cm
The thickness of another book = + 3.04 cm
The thickness of both books = 5.54 cm

(ii) The cost of one dozen banana = ₹ 25.30
The cost of 10 oranges = + ₹ 12.05
I have to spend for both = ₹ 37.35

(iii) Weight of Sonu = 20.250 kg
Weight of Javed = + 29.300 kg
∴ Weight of both of them = 49.550 kg

(iv) A creeper plant measured on Monday = 10.50 cm
On Tuesday, it grew another = + 1.25 cm
So, height of plant on Tuesday is = 11.75 cm

Exercise 8.5

1. (i) 45.50 − 25.12 = 20.38

(ii) 6.417 − 0.064 = 6.353

(iii) 3.579 − 2.796 = 0.783

(iv) 8.54 − 3.23 = 5.31

2. (i) 3.92 − 0.97 = 2.95

(ii) 5.214 − 0.068 = 5.146

(iii) 51.12 − 9.10 = 42.02

(iv) 34.010 − 28.984 = 5.026

(v) 71.4 − 56.5 = 14.9

(vi) 18.350 − 6.278 = 12.072

3. (i) 8.25 − 5.05 = 3.20
So, 3.20 should be added to 5.05 to get 8.25.

(ii) 12.38 − 1.37 = 11.01
So, 11.01 should be subtracted from 12.38 to get 1.37.

(iii) 21.725
– 14.250
7.475
So, 7.475 should be added to 14.25 t

(iv) 15.214
– 6.791
8.423
So, 8.423 should be substracted from 15.214

Exercise 8.6

1. (i) 31.5 (ii) 67.2 (iii) 14.55 (iv) 18.99 (v) 3.225 (vi) 0.042

2. (i) 1.24 × 6 = 7.44 (ii) 15.5 × 3 = 46.5 (iii) 1.51 × 9 = 13.59 (iv) 1.18 × 0.5 = 5.90, 000 × = 0.590 (v) 0.232 × 5 = 1.160 (vi) 2.35 × 6 = 14.10

3. (i) 2.5 × 4 = 10.0 (ii) 4.8 × 9 = 43.2 (iii) 123.4 × 5 = 617.0 (iv) 89.89 × 4 = 359.56 (v) 1.8 × 59 = 162, 90 × = 106.2 (vi) 1.13 × 9 = 10.17

(vii) 0.04 × 25 = 0.20, 008× = 1.00 (viii) 1.33 × 1.8 = 10.64, 133 × = 2.394 (ix) 4.2 × 1.8 = 336, 42 × = 7.56 (x) 2.45 × 5 = 12.25 (xi) 2.28 × 5 = 11.40 (xii) 8.041 × 9 = 72.369

4. (i) 12.256 ×10 = 122.560 (ii) 12.256 ×100 = 1225.600 (iii) 12.256 ×1000 = 12256.000

(vi) 25.48 × 10 = 254.80 (v) 25.48 × 100 = 2548.00 (vi) 25.48 × 1000 = 25480.00

(vii) 0.239 × 10 = 2.390 (viii) 0.239 × 100 = 23.900 (ix) 0.239 × 1000 = 239.000

5. (i) $0.2 \times 0.4 = 0.08$ (ii) $0.3 \times 0.2 = 0.06$ (iii) $0.24 \times 0.3 = 0.072$ (iv) $24.25 \times 0.2 = 4.850$

(v) $0.08 \times 0.4 = 0.032$ (vi) $0.04 \times 0.05 = 0.0020$ (vii) $0.5 \times 0.5 = 0.25$ (viii) $0.003 \times 18 = 0024$, $0003\times = 00.054$

(6) Fill in the blanks :

(i) 100 (ii) 1000 (iii) 10 (iv) 10000 (v) 10 (vi) 1000

Exercise 8.7

1. (i) $3\overline{)18.96}\,(6.32$ — 18, $\times 9$, 9, $\times 6$, 6, $\times$

(ii) $9\overline{)72.81}\,(8.09$ — 72, $\times 81$, 81, $\times$

(iii) $7\overline{)32.97}\,(4.71$ — 28, 49, 49, $\times 7$, 7, $\times$

(iv) $8\overline{)0.48}\,(0.06$ — 0, 48, 48, $\times$

(v) $9\overline{)42.39}\,(4.71$ — 36, 63, 63, $\times 9$, 9, $\times$

(vi) $6\overline{)0.96}\,(0.16$ — 0, 9, 6, 36, 36, $\times$

(vii) $2\overline{)0.038}\,(0.019$ — 0, 3, 2, 18, 18, $\times$

(viii) $5\overline{)29.5}\,(5.9$ — 25, 45, 45, $\times$

2. (i) $5\overline{)1.835}\,(0.367$ — 15, 33, 30, 35, 35, $\times$

Dividend = Divisor × Quotient
= 5 × 0.367 = 1.835

(ii) $3\overline{)168.6}\,(56.2$ — 15, 18, 18, $\times 6$, 6, $\times$

Dividend = Divisor × Quotient
= 3 × 56.2 = 168.6

(iii) $5\overline{)0.675}\,(0.135$

5
17
15
25
25
×

Dividend = Divisor × Quotient
= 5 × 0.135 = 0.675

(iv) $6\overline{)272.22}\,(45.37$

24
32
30
22
18
42
42
×

Dividend = Divisor × Quotient
= 6 × 45.37 = 272.22

(v) $3\overline{)17.736}\,(5.912$

15
27
27
×3
3
× 6
6
×

Dividend = Divisor × Quotient
= 3 × 5.912 = 17.736

(vi) $9\overline{)27.54}\,(3.06$

27
×54
54
×

Dividend = Divisor × Quotient
= 9 × 3.06 = 27.54

(vii) $9\overline{)3.825}\,(0.425$

36
22
18
45
45
×

Dividend = Divisor × Quotient
= 9 × 0.425 = 3.825

(viii) $12\overline{)4.8}\,(0.4$

4.8
×

Dividend = Divisor × Quotient
= 12 × 0.4 = 4.8

3. (i) $8\overline{)17.2}\,(2.15$

16
12
8
40
40
×

(ii) $2\overline{)9.15}\,(4.575$

8
11
10
15
14
10
10
×

(iii) $6\overline{)90.3}\,(15.05$

6
30
30
30
30
×

(iv) $4\overline{)3.1}\,(.7705$

28
30
28
20
20
×

(v) $8\overline{)5.2}\,(.605$

48
40
40
×

(vi) $4\overline{)18.09}\,(4.5225$

16
20
20
9
8
10
8
20
20
×

(vii) $5\overline{)2.67}\,(.534$

25
17
15
20
20
×

(viii) $4\overline{)7.4}\,(1.85$

4
34
32
20
20
×

4. (i) $92.5 \div 10 = 9.25$

(ii) $59.8 \div 100 = 0.598$

(iii) $12.8 \div 1000 = 0.0128$

(iv) $21.05 \div 100 = 0.2105$

(v) $32.15 \div 10 = 3.215$

(vi) 0.01109

5. (i) 10 (ii) 1000 (iii) 1000

(iv) 100 (v) 10 (vi) 100

6. (i) $\frac{6.4}{0.4} = \frac{64}{4}$

$4\overline{)64}\,(16$
4
24
24
$\times$

(ii) $\frac{2.52}{1.2} = \frac{25.2}{12}$

$12\overline{)25.2}\,(2.1$
24
12
12
$\times$

(iii) $\frac{1.5}{0.3} = \frac{15}{3}$

$3\overline{)15}\,(5$
15
$\times$

(iv) $\frac{4.9}{0.7} = \frac{49}{7}$

$7\overline{)49}\,(7$
49
$\times$

(v) $\frac{236.6}{0.26} = \frac{23660}{26}$

$26\overline{)23660}\,(910$
234
26
26
$\times\ 0$
0
$\times$

(vi) $\frac{3.15}{1.5} = \frac{31.5}{15}$

$15\overline{)31.5}\,(2.1$
30
15
15
$\times$

(vii) $\frac{9.69}{1.2} = \frac{96.9}{12}$

$12\overline{)96.9}\,(8.075$
96
90
84
60
60
$\times$

(viii) $\frac{4.26}{7.1} = \frac{42.6}{71}$

$71\overline{)42.60}\,(0.6$
426
$\times$

(ix) $\frac{0.625}{0.025} = \frac{625}{25}$

$25\overline{)625}\,(25$
50
125
125
$\times$

7. (i) $\frac{1}{8} = 0.125$ (ii) $\frac{1}{12} = 0.083$ (iii) $\frac{1}{2} = 0.5$

(iv) $\frac{3}{4} = 0.75$ (v) $2\frac{2}{5} = \frac{12}{5} = 2.4$ (vi) $\frac{1}{9} = 0.1111$

(vii) $7\frac{1}{4} = \frac{29}{4} = 7.25$ (viii) $\frac{7}{8} = 0.875$

Exercise 9.1

1. $16 - 8 \div 4 - 3 = [16 - (8 \div 4) - 3] = [16 - 2 - 3] = 11$ Ans
2. $32 \div 8 + 4 \times 6 - 2 = [(32 \div 8) + (4 \times 6) - 2] = [4 + 24 - 2] = 26$
3. $38 \div 19 \times 3 - 6 \times 18 \text{ of } \frac{5}{6} + 130 = 2 \times 3 - 6 \times 18 \times \frac{5}{6} + 130$
   $= 6 - 6 \times 15 + 130 = -90 + 136 = 46$
4. $\frac{1}{2} + \frac{1}{5} \times \frac{2}{3} = \frac{1}{2} + \frac{2}{15} = \frac{15+4}{30} = \frac{19}{30}$
5. $7\frac{1}{4} + \frac{1}{9} \times 3\frac{3}{4} - 5\frac{1}{3} \div 1\frac{2}{6} \text{ of } 1\frac{2}{3} = \frac{29}{4} + \frac{1}{9} \times \frac{15}{4} - \frac{16}{3} \div \frac{8}{6} \times \frac{5}{3}$
   $= \frac{29}{4} + \frac{1}{9} \times \frac{15}{4} - \frac{16}{3} \times \frac{6}{8} \times \frac{5}{3}$

$$= \frac{29}{4} + \frac{1}{3} \times \frac{5}{4} - 2 \times 2 \times \frac{5}{3} = \frac{29}{4} + \frac{5}{12} - \frac{20}{3}$$

$$= \frac{87+5}{12} - \frac{20}{3} = \frac{92}{12} - \frac{20}{3} = \frac{92-80}{12} = \frac{12}{12} = 1$$

6. $21 - [17 + \{3 + (7 + 9 - 15)\}] = 21 - [17 + \{3 + (16 - 15)\}]$

$= 21 - [17 + \{3 + 1\}] = 21 - [17 + 4] = 21 - 21 = 0$

7. $4 + [7 - \{2 - 3 + (8 - 2)\}] = 4 + [7 - \{2 - 3 + 6\}]$

$= 4 + [7 - \{5\}] = 4 + [7 - 5] = 4 + 2 = 6$

8. $12 - [4 \div 2 + \{3 \div 1 - (1 - \frac{1}{3})\}] = 12 - [4 \div 2 + \{3 \div 1 - \frac{2}{3}\}]$

$= 12 - [4 \div 2 + \{3 - \frac{2}{3}\}] = 12 - [4 \div 2 + \frac{7}{3}]$

$= 12 - [2 + \frac{7}{3}] \quad \Rightarrow \quad 12 - \frac{13}{3} = \frac{36-13}{3} = \frac{23}{3}$ Ans.

9. $14 - [8 + \{6 \div (7 - 6 + 2) \times 3\}] = 14 - [8 + \{6 \div 3 \times 3\}]$

$= 14 - [8 + 6] = 14 - 14 = 0$

10. $148 - [85 \div 17 \times 2 + \{18 \text{ of } 2 \div 2 - (4 + 10 - 7)\}]$

$= 148 - [85 \div 17 \times 2 + \{18 \text{ of } 2 \div 2 - 7\}]$

$= 148 - [85 \div 17 \times 2 + \{18 \times 1 - 7\}]$

$= 148 - [85 \div 17 \times 2 + 11]$

$= 148 - [5 \times 2 + 11]$

$= 148 - [10 + 11]$

$= 148 - 21 = 127$ Ans.

10. Basic Geometrical Concepts

Exercise 10.1

Do yourself.

Exercise 10.2

1. (i) Vertex = Q, arms QP and QR (ii) Vertex = E, arms = EF and ED
   (iii) Vertex = N, arms = MN and NZ (iv) Vertex = Y, arms = XY, YZ
2. (i) $\angle$ LMN (ii) $\angle$DEF (iii) $\angle$PQR (iv) $\angle$ABC
3. Do yourself.

Exercise 10.3

Do your self

Exercise 10.4

Do your self

Exercise 10.5

Do your self

11. Length

Exercise 11.1

1. 35421 mm

(i) $1\text{ mm} = \frac{1}{10}\text{ cm};\ \therefore 35421\text{ mm} = \frac{35421\times 1}{10} = \frac{35421}{10} = 3542.1\text{ cm}$

(ii) $1\text{ mm} = \frac{1}{100}\text{ dm},\ 35421\text{ mm} = \frac{35421\times 1}{100} = \frac{35421}{100} = 354.21\text{ dm}$

(iii) $1\text{ mm} = \frac{1}{10000}\text{ m},\ \therefore 35421\text{ mm} = \frac{35421\times 1}{1000} = \frac{35421}{1000} = 35.421\text{ metres}$

(iv) $1\text{ mm} = \frac{1}{1000}\text{ dam},\ \therefore 35421\text{ mm} = \frac{35421\times 1}{10000} = \frac{35421}{10000} = 3.5421\text{ decametres}$

2. 20520 metres

We know that $1\text{ m} = \frac{1}{10}\text{ dam},\ 1\text{ m} = \frac{1}{100}\text{ hm},$

$1\text{ m} = \frac{1}{1000}\text{ km}$

(i) $20520\text{ metre} = \frac{20520\times 1}{10} = \frac{20520}{10} = 2052.0\text{ decametres}$

(ii) $20520\text{ metre} = \frac{20520\times 1}{100} = \frac{20520}{100} = 205.20\text{ hectometre}$

(iii) $20520\text{ metre} = \frac{20520\times 1}{1000} = \frac{20520}{1000} = 20.52\text{ kilometre}$

3. 5.423 metres

(i) $5.243\text{ metres} = 5.243\times 10\text{ dm} = 52.43\text{ decimetres}$

(ii) $5.243\text{ metres} = 5.243\times 100\text{ cm} = 524.3\text{ centimetres}$

(iii) $5.243\text{ metres} = 5.243\times 1000\text{ mm} = 5243.00\text{ millimetres}$

4. (i)

9.60	m
4.06	m
+ 0.75	m
14.41	m

= 14 m 41 cm

(ii)

8.350	km
7.075	km
+ 4.006	km
19.431	km

= 19 km 431 m

(iii)

5.550	km
3.096	km
+ 2.007	km
10.653	km

= 10 km 653 m

5. (i) 3 km 4 hm 5 dam 6 m

$= 3\text{ km} + \frac{4\times 1}{10}\text{ hm} + \frac{5\times 1}{100}\text{ dam} + \frac{6\times 1}{1000}\text{ m}$

$= 3\text{ km} + 0.4\text{ hm} + 0.05\text{ dam} + 0.006\text{ m}$

$= 3.456\text{ km}$

(ii) 2 km 2 hm 3 dam 4 m

$= 2\text{ km} + \frac{2\times1}{10}\text{ hm} + \frac{3\times1}{100}\text{ dam} + \frac{4\times1}{1000}\text{ m}$

$= 2 + 0.2 + 0.03 + 0.004 = 2.234\text{ km}$

6. (i) 5 m 6 dm 2 cm 3 mm

$= 5\text{ m} + \frac{6\times1}{10}\text{ dm} + \frac{2\times1}{100}\text{ cm} + \frac{3\times1}{1000}\text{ mm}$

$= 5\text{ m} + \frac{6\times1}{10}\text{ dm} + \frac{2\times1}{100}\text{ cm} + \frac{3\times1}{1000}\text{ mm}$

$= 5.623\text{ m}$

(ii) 3 m 4 dm 2 cm 1 mm

$= 3\text{ m} + \frac{4\times1}{10}\text{ dm} + \frac{2\times1}{100}\text{ cm} + \frac{1\times1}{1000}\text{ mm}$

$= 3\text{ m} + 0.4\text{ dm} + 0.02\text{ cm} + 0.001\text{ m} = 3.421\text{ m}$

(iii) 5 m 8 dm 9 cm 0 mm

$= 5\text{ m} + \frac{8\times1}{10}\text{ dm} + \frac{9\times1}{100}\text{ cm} + \frac{0\times1}{1000}\text{ mm}$

$= 5\text{ m} + 0.8\text{ m} + 0.09\text{ cm} + 0 = 5.890\text{ m}$

7. Golu runs in a day = 2.4 km

So, runs in a week $= 2.4 \times 7$

$= 16.8\text{ km}$

8. $\because$ 16 shirts need = 44 m of cloth

$\therefore$ 1 shirt needs $= \frac{44}{16} = 2.75\text{ m}$

$\therefore$ 29 shirts need $= 2.75 \times 29 = 79.75\text{ m}$ of cloth.

9. The first skip rope length = 5 m

The second skip rope length = – 4.05 m

So, the first skip rope is longer by = 0.95 m

10. Need of cloth for 1 car cover = 5.96 m

So, cloth required for 39 such covers $= 5.96 \times 39$

$= 232.44\text{ m}$

11. The height of the table = 86 cm

The height of the stool = 54 cm

So, The height in metres Mohan is standing = 86 + 54 = 140 cm

$= 1.4\text{ m}$

Exercise 11.2

1. We know that 1 mg $= \frac{1}{10}$ cg, 1 mg $= \frac{1}{100}$ dg, 1 mg $= \frac{1}{1000}$ g, 1 mg $= \frac{1}{1000}$ dag

(i) 234586 mg $= \frac{234586\times1}{10} = \frac{234586}{10} = 23458.6$ cg

(ii) $234586 \text{ mg} = \frac{234586 \times 1}{100} = \frac{234586}{100} = 2345.86 \text{ dg}$

(iii) $234586 \text{ mg} = \frac{234586 \times 1}{1000} = \frac{234586}{1000} = 234.586 \text{ g}$

(iv) $234586 \text{ mg} = \frac{234586 \times 1}{10000} = \frac{234586}{10000} = 23.4586 \text{ dag}$

2. We know that 1 kg = 10 hg, 1 kg = 100 dag, 1 kg = 1000 g, 1 kg = 10000 dg

(i) $45.2352 \text{ kg} = 45.2352 \times 10 = 452.352 \text{ hg}$

(ii) $45.2352 \text{ kg} = 45.2352 \times 100 = 4523.52 \text{ dag}$

(iii) $45.2352 \text{ kg} = 45.2352 \times 1000 = 45235.2 \text{ g}$

(iv) $45.2352 \text{ kg} = 45.2352 \times 10000 = 452352 \text{ dg}$

3. We know that 1 kg = 1000 g, 1 hg = 100 g, 1 dag = 10 g

(i) 1000 g + 300 g + 20 g + 5 g = 1325 g ÷ 1000 g = 1.325 kg

(ii) 500 g + 40 g + 9 g = 549 g ÷ 1000 g = .549 kg

(iii) 4000 g + 800 g + 90 g + 6 g = 4896 g ÷ 1000 g = 4.896 kg

(iv) 1500 g + 40 g = 1540 g ÷ 1000 g = 15.4 kg

4. (i) We know that 1 kg = 1000 g

$1.4 \text{ kg} = 1.4 \times 1000 = 1400 \text{ g}$ (ii) $0.45 \text{ kg} = 0.45 \times 1000 = 450 \text{ g}$

(iii) $10.545 \text{ kg} = 10.545 \times 1000 = 10545 \text{ g}$ (iv) $95.41 \text{ kg} = 95.41 \times 1000 = 95410 \text{ g}$

5. 1 kg 5 hg 6 g 2 mg $\Rightarrow 1 + \frac{5 \times 1}{10} + \frac{6 \times 1}{1000} + \frac{2 \times 1}{100000}$

$= 1 \text{ kg} + 0.5 \text{ kg} + 0.006 \text{ kg} = 1.506002 \text{ kg}$

$$\begin{array}{r} 1.506002 \\ \times 16 \\ \hline 9036012 \\ 1506002\times \\ \hline 24.096032 \text{ kg} \end{array}$$

6. 2 kg of ghee contains fat = 0.582 kg

$\therefore$ 1 kg of ghee contains fat $= \frac{0.582}{2} = 0.291 \text{ kg}$

$\therefore 9 \text{ kg of ghee contains fat} = 0.291 \times 9$

$= 2.619 \text{ kg}$

7. Weight of 8 bags of rice = 138.12 kg

$\therefore$ Weight of 1 bag of rice $= \frac{138.12}{8} = 17.265 \text{ kg}$

Exercise 11.3

1. We know that 1 kl = 10 hl, 1 kl = 100 dal, 1 kl = 1000 l, 1 kl = 10000 dl

(i) $1.25421 \text{ kl} = 1.25421 \times 10 = 12.5421 \text{ hl}$

(ii) $1.25421 \text{ kl} = 1.25421 \times 100 = 125.421 \text{ dal}$

(iii) $1.25421 \text{ kl} = 1.25421 \times 1000 = 1254.21 \, l$

(iv) $1.25421 \text{ kl} = 1.25421 \times 10000 = 12542.1 \text{ dl}$

2. We know that 1 ml = $\frac{1}{10}$ dl, 1 ml = $\frac{1}{100}$ dl, 1 ml = $\frac{1}{1000}$ *l*, 1 ml = $\frac{1}{10000}$ dal

(i) 224345 ml = $\frac{224345 \times 1}{10} = \frac{224345}{10} = 22434.5$ cl

(ii) 224345 ml = $\frac{2243345 \times 1}{100} = \frac{224345}{100} = 2243.45$ dl

(iii) 224345 ml = $\frac{224345 \times 1}{1000} = \frac{224345}{1000} = 224.345\, l$

(iv) 224345 ml = $\frac{224345 \times 1}{10000} = \frac{224345}{10000} = 22.4345$ dal

3. We know that 1 litre = 1000 ml, 1 litre = 100 dl, 1 litre = 10 dl

(i) 0.2345 litre = $0.2345 \times 1000 = 2345$ ml

(ii) 0.2345 litre = $0.2345 \times 100 = 23.45$ c*l*

(iii) 0.2345 litre = $0.2345 \times 10 = 2.345$ dl

4. (i) 5 *l* 2 d*l* 3 *cl* 4 m*l*

$= 5\,l + \frac{2 \times 1l}{10} + \frac{3 \times 1}{100}\,l + \frac{4 \times 1}{1000}\,l$

$= 5\,l + 0.2\,l + 0.03\,l + 0.004\,l = 5.234\,l$

(ii) 5 cl 2 m*l*

$\because$ 1 litre = 100 c*l*, 1 litre = 1000 m*l*

$\Rightarrow \quad \frac{5 \text{ cl}}{100 \text{ cl}} + \frac{2 \text{ m}l}{1000 \text{ m}l}$

$= 0.05\,l + 0.002\,l = 0.052$ litres

(iii) 8 *l* 9 d*l* 5 c*l* 4 m*l*

$\because$ 1 litre = 10 d*l*, 1 litre = 100 c*l*, 1 litre = 1000 m*l*

$\Rightarrow \quad 8\,l + \frac{9\,dl}{10\,dl} + \frac{5\,cl}{100\,cl} + \frac{4\,ml}{1000\,ml}$

$\Rightarrow \quad 8\,l + 0.9\,l + 0.05\,l + 0.004$

$\Rightarrow \quad 8.954$ litre

5. (i) 19 k*l* 4 h*l* 1 dal 4 *l*

$\because$ 1 k*l* = 10 h*l*, 1 k*l* = 100 dal, 1 k*l* = 1000 *l*

$\Rightarrow \quad 19 \text{ kl} + \frac{4\,hl}{10\,hl} + \frac{1\,dal}{100\,dal} + \frac{4\,l}{1000\,l}$

$\Rightarrow \quad 19$ h*l* + 0.4 k*l* + 0.01 k*l* + 0.004 k*l*

$= 19.414$ k*l*

(ii) 12 k*l* 5 *l*

$\because \quad 1$ k*l* = 100 *l*

$\Rightarrow \quad 12 \text{ k}l + \frac{5\,l}{1000\,l}$

$\Rightarrow \quad 12\,kl + 0.005\,kl$

$= 12.005\,kl$

(iii) 4 kl 8 hl 5 da$l$ 4 l

$\because$ 1 kl = 10 hl, 1 kl = 100 da$l$, 1 kl = 1000 l

$\Rightarrow \quad 4 \text{ k}l + \frac{8\,hl}{10\,hl} + \frac{5\,dal}{100\,dal} + \frac{4\,l}{1000\,l}$

$\Rightarrow$ 4 kl + 0.8 kl + 0.05 kl + 0.004 kl

$\Rightarrow$ 4.845 kl

6. The weight of pencil box = 250 g

$\therefore$ No. of pencil boxes = $\begin{array}{r} 250 \\ \times 12 \\ \hline 500 \\ 250\times \\ \hline 3000 \text{ g} \end{array}$

The weight of 12 such pencil box = 3000 g

So, the weight of 12 such pencil boxes in kilogram = 3000 ÷ 1000 = 3 kg

7. 2 kl 6 hl 4 da$l$ 9 da$l$ 2 cl

$\because$ 1 kl = 10 hl, 1 kl = 100 da$l$, 1 kl = 1000 l, 1 kl = 10000 dl 1 kl = 100000 cl

$\Rightarrow \quad 2 \text{ k}l + \frac{6 \text{ h}l}{10} + \frac{4 \text{ da}l}{100} + \frac{9\,l}{1000} + \frac{9 \text{ da}l}{10000} + \frac{2 \text{ c}l}{100000}$

$\Rightarrow$ 2 kl + 0.6 kl + 0.04 kl + 0.009 kl + 0.0009 kl + 0.00002 kl

$\Rightarrow$ 2.64992 kl

$$\begin{array}{r} 52\overline{)2.64992}\,(0.05096 \\ 260 \\ \hline 499 \\ 468 \\ \hline 312 \\ 312 \\ \hline \times \end{array}$$

8. Quantity of oil filled in 1 bottles = 8 dl

$\therefore$ Quantity of oil filled in 7 bottles = $8 \times 7 = 56$ dl

Quantity oil in the jar = 6 l

$= 6 \times 10\ dl$

$= 60\ dl$

$\therefore$ Quantity of oil left in the jar = 60 – 56 = 4 dl

9. First tank contains the oil = 1072.10 l

Second tank contain the oil = 1928.35 l

Third tank contains the oil = 875.25 l

Fourth tank contains the oil = 2245 l

Total oil in four tank = 1072.10 + 1928.35 + 875.25 + 2245

= 6120.70 l

The capacity of the petrol pump = 6500 l

More Petrol is required to fill the tank = 6500 – 6120.7 = 379.30 l

10. A swimming pool needs water = 245 kl 945 l
No. of days water was filled = 7 days
Water filled in 1 day = 245.945 ÷ 7 kl

$$= 7\overline{)245.945}\,(35.135\ k\mathit{l}$$

21
35
35
×9
7
24
21
35
35
×

So, water filled in one day = 35 kl 135 l

12. Time

Exercise 12.1

1. Fill in the blanks :
(i) am (ii) 3600 (iii) 52 (iv) 24
2. Write a.m. or p.m.
(i) am (ii) am, pm (iii) pm (iv) pm
(v) pm

Exercise 12.2

1. (i) 5 days
= 5 × 24 hours
= 120 hours

(ii) 7 days 20 hours
= (7 × 24) + 20 hours
= 168 + 20 = 188 hours

(iii) 8 days 15 hours
= (8 × 24) + 15 hours
= 192 + 15 = 207 hours

(iv) 10 days 2 hours
= (10 × 24) + 2 hours
= 240 + 2 hours
= 242 hours

(v) 9 days 20 hours
= (9 × 24) + 20 hours
= 216 + 20 = 236 hours

(vi) 15 days 10 hours
= (15 × 24) + 10 hours
= 360 + 10 = 370 hours

2. (i) 568 hours
= 568 ÷ 24
= 23 days 16 hours

(ii) 1040
= 1040 ÷ 24
= 43 days 8 hours

(iii) 986 hours
= 986 ÷ 24
= 41 days 2 hours

(iv) 795 hours
$= 795 \div 24$
= 33 days 3 hours

(v) 1260 hours
$= 1260 \div 24$
= 52 days 12 hours

(vi) 894 hours
$= 894 \div 24$
= 37 days 6 hours

3. (i) 15 hours
$= 15 \times 60$ min
= 900 min

(ii) 5 hours 25 minutes
$= (5 \times 60) + 25$ min
$= 300 + 25$ min
= 325 min

(iii) 6 hours 20 min
$= (6 \times 60) + 20$ min
$= 360 + 20$ min
= 380 min

(iv) 7 hours 20 min
$= (7 \times 60) + 20$ min
$= 420 + 20 = 440$ min

(v) 9 hours 22 min
$= (9 \times 60) + 20$
$= 540 + 20 = 560$ min

(vi) 18 hours 5 minutes
$= (18 \times 60) + 5$ minutes
= 1085 min

4. (i) 580 minutes
$= 580 \div 60$
= 9 hours 40 min

(ii) 620 min
$= 620 \div 60$
= 10 hours 20 min

(iii) 800 min
$= (800 \div 60)$
= 13 hours 20 min

(iv) 1200 min
$= 1200 \div 60$
= 20 hours 0 min

(v) 1500 min
$= 1500 \div 60$
= 25 hours 0 min

(vi) 2385 min
$= 2385 \div 60$
= 39 hours 45 min

5. (i) 4 min
$= 4 \times 60$
= 240 seconds

(ii) 6 min 20 second
$= (6 \times 60) + 20$ seconds
$= 360 + 20$ seconds
= 380 seconds

(iii) 9 min 10 seconds
$= (9 \times 60) + 10$ seconds
$= 540 + 10$ seconds
= 550 seconds

(iv) 11 min 25 seconds
$= (11 \times 60) + 25$ seconds
$= 660 + 25 = 685$ seconds

(v) 20 min 35 seconds
$= (20 \times 60) + 35$ seconds
$= 1200 + 35$ seconds
= 1235 seconds

(vi) 20 min
$= 20 \times 60$ seconds
= 1200 seconds

6. (i) 360 seconds
= 360 ÷ 60
= 6 min

(ii) 960 seconds
= 960 ÷ 60
= 16 min

(iii) 1080 seconds
= 1080 ÷ 60
= 18 min

(iv) 1270 seconds
= 1270 ÷ 60
= 21 min 10 sec

(v) 2880 seconds
= 2880 ÷ 60
= 48 min

(vi) 3240 seconds
= 3240 ÷ 60
= 54 min

Exercise 12.3

1. Is it daylight or darkness ?

(i) Daylight (ii) Darkness (iii) Darkness (iv) Daylight
(v) Darkness (vi) Daylight

2. (i) 3 hours before 1125 hours
3 hours means = 0300 (24 hour clock)
= 1125 − 0300 = 0825 hours

(ii) 2 hours after 1320 hour
2 hours means = 0200 (24 hour clock)
= 1320 + 200 = 1520 hours

(iii) 2 hours after 1600 hours
2 hours means = 0200 (24 hour clock)
= 1600 + 0200 = 1800 hours

(iv) 3 hours after 0145 hours
3 hours means = 0300 (24 hour clock)
= 0145 + 0300 = 0445 hours

3. (i) 4 : 30 am
In 24 hour clock
4 : 30 am = 0430 hours

(ii) 11 : 50 pm
In 24 hour clock
11 : 50 pm = 12 + 11 : 50 = 2350 hours

(iii) 7 : 00 pm
In 24 hour clock
12 + 7 : 00 = 1900

(iv) 09 : 50 am
In 24 hour clock
09 : 50 am = 0950 hours

(v) 4 : 00 pm
In 24 hour clock
12 + 4 : 00 = 1600 hours

(vi) 9 : 30 am
In 24 hour clock
9 : 30 am = 0930 hours

4. (i) 0740 hours
In 12 hour clock
= 0740 hours = 7 : 40 am

(ii) 1640 hours
In 12 hour clock
= 1640 hour − 1200 hours = 4 : 40 pm

(iii) 1600 hour

In 12 hour clock

= 1600 hours – 1200 hours = 4 : 00 pm

(v) 0000 hour

In 12 hour clock

= 0000 hour = 0.00 am

(v) 1940 hour

In 12 hour clock

= 1940 hours – 1200 hours = 7 : 40 pm

(vi) 1845 hour

In 12 hour clock

= 1845 hour – 1200 hours = 6 : 45 pm

5. Do yourself.

Exercise 12.4

1. (i)
$$\begin{array}{r} 5 \text{ hr } 12 \text{ min} \\ +\ 7 \text{ hr } 13 \text{ min} \\ \hline 12 \text{ hr } 25 \text{ min} \end{array}$$

(ii)
$$\begin{array}{r} 6 \text{ hr } 25 \text{ min} \\ +\ 8 \text{ hr } 42 \text{ min} \\ \hline 15 \text{ hr } 07 \text{ min} \end{array}$$

(iii)
$$\begin{array}{r} 17 \text{ hr } 30 \text{ min} \\ +\ 6 \text{ hr } 45 \text{ min} \\ \hline 24 \text{ hr } 15 \text{ min} \end{array}$$

(iv)
$$\begin{array}{r} 15 \text{ min } 30 \text{ seconds} \\ +\ 13 \text{ min } 19 \text{ seconds} \\ \hline 28 \text{ min } 49 \text{ seconds} \end{array}$$

(v)
$$\begin{array}{r} 24 \text{ min } 45 \text{ seconds} \\ +\ 50 \text{ min } 18 \text{ seconds} \\ \hline 75 \text{ min } 03 \text{ seconds} \end{array}$$

2. (i)
$$\begin{array}{r} 7 \text{ hr } 45 \text{ min} \\ -\ 4 \text{ hr } 20 \text{ min} \\ \hline 3 \text{ hr } 25 \text{ min} \end{array}$$

(ii)
$$\begin{array}{r} 8 \text{ hr } 20 \text{ min} \\ -\ 6 \text{ hr } 32 \text{ min} \\ \hline 1 \text{ hr } 48 \text{ min} \end{array}$$

(iii)
$$\begin{array}{r} 12 \text{ hr } 00 \text{ min} \\ -\ 9 \text{ hr } 54 \text{ min} \\ \hline 2 \text{ hr } 06 \text{ min} \end{array}$$

(iv)
$$\begin{array}{r} 6 \text{ min } 12 \text{ seconds} \\ -\ 5 \text{ min } 25 \text{ seconds} \\ \hline 0 \text{ min } 47 \text{ seconds} \end{array}$$

Exercise 12.5

1. Fill in the blanks :

(i) 14 Jan (ii) 30 April (iii) 1 Feb (iv) 3 March (v) 4th April

2. (i) 3 years 7 months

1 year = 12 months

$= (3 \times 12) + 7$ months

$= 36 + 7$ months

= 43 months

(ii) 8 years 5 months

1 year = 12 months

$= (8 \times 12) + 5$ months

$= 96 + 5$ months

= 101 months

(iii) 5 years 11 months

1 year = 12 months

$= (5 \times 12) + 11$ months

$= 60 + 11$ months

= 71 months

3. (i) 7 weeks 3 days
1 week = 7 days
$= (7 \times 7) + 3$ days
$= 49 + 3$ days
$= 52$ days

(ii) 4 weeks 6 days
1 week = 7 days
$= (4 \times 7) + 6$ days
$= 28 + 6$ days
$= 34$ days

(iii) 11 weeks 4 days
2 week = 7 days
$= (11 \times 7) + 4$ days
$= 77 + 4$ days
$= 81$ days

4. (i) 43 months
$= 43 \div 12$
= 3 years 7 months

(ii) 28 months
$= 28 \div 12$
= 2 years 4 months

(iii) 39 months
$= 39 \div 12$
= 3 years 3 months

(iv) 83 months
$= 83 \div 12$
= 6 years 11 months

5. School starts = 7 am = 0700 hour
School ends = 1 : 15 pm = 1315 hours
Total working hours of the school = 1315 – 0700 = 6 hours 15 min

6. John left for the magic show at = 11 : 25 am = 1125 hours
John returned from the magic show at = 3 : 10 pm 1510 hours
He was away for = 1510 – 1125 = 0385 hours = 3 hours 45 min

13. Money

Exercise 13.1

1. (i) 200 page note book for ₹ 15
(ii) 2 T-shirts for ₹ 300
(iii) 2 l milk for ₹ 90
(iv) 3 kg mangoes for ₹ 75

2. (i) The cost of 8 kg rice = ₹ 640
$\therefore$ The cost of 1 kg rice = $640 \div 8$ = ₹ 80
So, the cost of 12 kg rice is = ₹ 80×12 = ₹ 960

(ii) Ruchi bought a pen for = ₹ 9.65
She bought an eraser for = ₹ 4.65
She bought a sharpener for = ₹ + 3.25
She spent the money in all = ₹ 17.55

(iii) The cost of 6 pens = ₹ 48

$\therefore$ The cost of 1 pen = $48 \div 6$ = ₹ 8

The cost of 24 pens = 24×8 = ₹ 192

So, the cost of 24 pens = ₹ 192

(iv) The cost of 35 metres of cloth = ₹ 1487.50

$\therefore$ The cost of 1 metre of cloth = ₹ $1487.50 \div 35$

= ₹ 42.5

$\therefore$ The cost of 19 metres of cloth = 19×42.5 = ₹ 807.5

So, the cost of 19 metres of cloth is = ₹ 807.5

(v) Cost of 8 special bags = ₹ 13480

$\therefore$ Cost of 1 special bag = ₹ $13480 \div 8$

= ₹ 1685

$\therefore$ Cost of 13 special bags = 1685×13 = ₹ 21905

So, the cost of 13 special bags = ₹ 21905

(vi) A worker earned in 8 days = ₹ 1080

He earned in 1 day = $1080 \div 8$ = ₹ 135

He earned in 3 days = 135×3 = ₹ 405

So, the worker earned in 3 days = ₹ 405

(vii) 18 buses can take people = 936

$\therefore$ 1 bus can take people = $936 \div 18 = 52$

So, one bus can take 52 people.

(viii) Deepak bought 8 notebooks for = ₹ 92

Cost of 1 notebooks = $92 \div 8$ = ₹ 11.5

Cost of 13 notebooks = ₹ 11.5×13 = ₹ 149.50

So, the cost of 13 notebooks = ₹ 149.50

(ix) 45 cows can graze a field in = 18 days

$\therefore$ 1 cow can graze the field in = $\frac{18}{45}$ days

$\therefore$ 30 cow can graze the field in = $\frac{18 \times 30}{45} = 12$ days

(x) Mrs. Joshi bought a baby dress for = ₹ 45.75

She gave the note of value = ₹ 50

$\therefore$ Money she would get back = ₹ 50 – 45.75

= ₹ 4.25

$$\begin{array}{r} 50.00 \\ -\ 45.75 \\ \hline 4.25 \end{array}$$

(xii) Cost of 5 tennis balls = ₹ 72.50

$\therefore$ Cost of 1 tennis balls = $72.50 \div 5$ = ₹ 14.5

$\therefore$ Cost of 8 tennis balls = ₹ 14.5×8 = ₹ 116

So, the cost of 8 tennis balls = ₹ 116

Exercise 13.2

1. (i) Cost price = ₹240

Selling price = ₹260

Profit = Selling price – Cost price = 260 – 240 = ₹20 profit

(ii) Cost price = ₹600

Selling price = ₹730

Profit = Selling price – Cost price = 730 – 600 = ₹130 profit

(iii) Cost price = ₹540

Selling price = ₹490

Loss = Cost price – Selling price = 540 – 490 = ₹50 loss

(iv) Cost price = ₹5260

Selling price = ₹4890

Loss = Cost price – Selling price = 5260 – 4890 = ₹370 loss

(v) Cost price = ₹75

Selling price = ₹80.50

Profit = Selling price – Cost price = 80.50 – 75 = ₹5.50 profit

(vi) Cost price = ₹8165

Selling price = ₹8275

Profit = Selling price – Cost price = 8275 – 8165 = ₹110 profit

(vii) Cost price = 4562

Selling price = 4270

Profit = Cost price – Selling price = 4562 – 4270 = ₹292 loss

2. (i) Selling price = ₹500

Profit = ₹200

Cost price = Selling price – Profit = 500 – 200 = ₹300

Cost price = ₹300

(ii) Selling price = ₹1950

Loss = 220

Cost price = Selling price + Loss

Cost price = 1950 + 220 = ₹2170

(iii) Selling price = ₹8550

Loss = ₹1000

Cost price = Selling price + Loss

Cost price = ₹8550 + 1000 = ₹9550

(iv) Selling price = ₹ 12000

Profit = ₹ 3000

Cost price = Selling price – Profit

Cost price = 12000 – 3000 = ₹ 9000

(v) Selling price = ₹ 11021

Loss = ₹ 2121

Cost price = Selling price + Loss

Cost price = 11021 + 2121 = ₹ 13142

(vi) Selling price = ₹ 9909

Profit = ₹ 1125

Cost price = Selling price – Profit

Cost price = 9909 – 1125 = ₹ 8784

3. (i) Cost price = ₹ 200

Loss = ₹ 50

Selling price = Cost price – Loss = 200 – 50 = ₹ 150

(ii) Cost price = ₹ 3750

Profit = ₹ 590

Selling price = Cost price + Profit = 3750 + 590 = ₹ 4340

(iii) Cost price = ₹ 2560

Loss = ₹ 545

Selling price = Cost price – Loss = 2560 – 545 = ₹ 2015

(iv) Cost price = ₹ 2895

Profit = ₹ 1050

Selling price = Cost price + Profit = 2895 + 1050 = ₹ 3945

(v) Cost price = ₹ 8550

Loss = ₹ 590

Selling price = Cost price – Loss 8550 – 590 = ₹ 7960

(vi) Cost price = ₹ 10840

Profit = ₹ 1515

Selling price = Cost price + Profit = ₹ 10840 + 1515 = ₹ 12355

4. (i) Cost price of the chair = ₹ 1200

Selling price of the chair = ₹ 1050

Loss = Cost price – Selling price

= ₹ 1200 – ₹ 1050 = ₹ 150

(ii) Profit on sale = ₹ 75

The cost price of radio = ₹ 650

∴ Selling price of radio = Cost price + Profit = ₹ 650 + ₹ 75 = ₹ 725

So, the selling price of the radio = ₹ 725

(iii) Sandeep bought a walkman for = ₹ 3784

He sold the walkman for = ₹ 4015

∴ Profit = Selling price – Cost price = 4015 – 3784 = ₹ 231

(iv) The boy bought a robot for = ₹ 1845

Profit on sale = ₹ 175

Selling price = Cost price + Profit = 1845 + 175 = ₹ 2020

(v) Raju buys a hand watch for = ₹ 265

He esells the hand watch for = ₹ 282

∴ Profit = Selling price – Cost price = 282 – 265 = ₹ 17

So, profit = ₹ 17

(vi) A shopkeeper sells a teddy bear for = ₹ 456

Loss of the shopkeeper = ₹ 45

Cost price = Selling price + Loss = 456 + 45 = ₹ 501

So, the cost price of the teddy bear = ₹ 501

(vii) Arif bought a celling fan for = ₹ 945

His loss = ₹ 75

∴ Selling price = Cost price – Loss = 945 – 75 = ₹ 870

So, the selling price of celling fan = ₹ 870

(viii) The selling price of washing machine = ₹ 5380

Profit in selling = ₹ 985

∴ Cost price = Selling price – Profit = 5380 – 985 = ₹4395

So, the cost price of the washing machine = ₹ 4395

14. Percentage

Exercise 14.1

1. (i) $5\% = 5 \times \frac{1}{100} = \frac{5}{100}$ (ii) $14\% = 14 \times \frac{1}{100} = \frac{14}{100}$

(iii) $25\% = 25 \times \frac{1}{100} = \frac{25}{100}$ (iv) $95\% = 95 \times \frac{1}{100} = \frac{95}{100}$

2. (i) $\frac{28}{100} = 0.28\%$ (ii) $\frac{45}{100} = 0.45\%$

(iii) $\frac{59}{100} = 0.59\%$ (iv) $\frac{91}{100} = 0.91\%$

3. (i) $\frac{7}{10} = \frac{7 \times 100}{10} = 70\%$ (ii) $\frac{3}{20} = \frac{3 \times 100}{20} = 15\%$

(iii) $\frac{18}{25} = \frac{18 \times 100}{25} = 72\%$ (iv) $\frac{41}{50} = \frac{41 \times 100}{50} = 82\%$

(v) $2\frac{1}{2} = \frac{5}{2} = \frac{5 \times 100}{2} = 250\%$ (vi) $2\frac{1}{5} = \frac{11}{5} = \frac{11 \times 100}{5} = 220\%$

(vii) $15\frac{1}{2} = \frac{31}{2} = \frac{31 \times 100}{2} = 1550\%$ (viii) $5\frac{1}{2} = \frac{11}{2} = \frac{11 \times 100}{2} = 550\%$

4. (i) $8\% = \frac{8}{100} = 0.08$ (ii) $12\% = \frac{12}{100} = 0.12$

(iii) $24\% = \frac{24}{100} = 0.24$ (iv) $110\% = \frac{110}{100} = 1.10$

(v) $36.5\% = \frac{36.5}{100} = 0.365$ (vi) $20.5\% = \frac{20.5}{100} = 0.205$

(vii) $20\% = \frac{20}{100} = 0.20$ (viii) $98\% = \frac{98}{100} = 0.98$

5. (i) $0.26 = \frac{26}{100} = 26 \times \frac{1}{100} = 26\%$ (ii) $0.35 = \frac{35}{100} = 35 \times \frac{1}{100} = 35\%$

(iii) $0.84 = \frac{84}{100} = 84 \times \frac{1}{100} = 84\%$ (iv) $29.6 = \frac{2960}{100} = 2960 \times \frac{1}{100} = 2960\%$

(v) $0.025 = \frac{25}{1000} = \frac{25}{10} \times \frac{1}{100} = 2.5\%$ (vi) $3.4 = \frac{34}{10} = \frac{340}{100} = 340 \times \frac{1}{100} = 340\%$

(vii) $7.9 = \frac{79}{10} = \frac{790}{100} = 790 \times \frac{1}{100} = 790\%$

(viii) $0.55 = \frac{55}{100} = 55 \times \frac{1}{100} = 55\%$

6. Fill in the blanks with percentages.

(i) 10% (ii) 15%

(iii) 25% (iv) 0.025%

(v) 0.035% (vi) 0.45%

7. (i) $8\% \text{ of } 200 = 200 \times \frac{8}{100} = 2 \times 8 = 16$ (ii) $4\% \text{ of } 14 = 14 \times \frac{4}{100} = 0.56$

(iii) $9\% \text{ of } 129 = 129 \times \frac{9}{100} = 11.61$ (iv) $13\% \text{ of } 13 = 13 \times \frac{13}{100} = 1.69$

(v) $50\% \text{ of } 20 = 20 \times \frac{50}{100} = 10$ (vi) $3\% \text{ of } 250 = 250 \times \frac{3}{100} = 7.5$

(vii) $75\% \text{ of } 900 = 900 \times \frac{75}{100} = 675$ (viii) $10\% \text{ of } \frac{2}{5} = \frac{2}{5} \times \frac{10}{100} = 0.04$

8. $400 \text{ of } 1 \text{ kg} = \frac{400}{1000} = \frac{40}{100} = 40\%$

Exercise 14.2

1. Radha earns per month = ₹ 4670

   She spends = 45% of her income

   $$= 4670 \times \frac{45}{100} = ₹ 2101.50$$

   $\therefore$ Her savings per month = ₹ 4670 – ₹ 2101.50

   = ₹ 2568.50

2. Ram scored the marks in exam = 240

   Total marks of exam = 300

   Percentage of marks he got in exam = $\frac{240}{300} \times 100$

   His percentage = 80%

3. The population of the town = 7224520

   Percentage of male = 40% $\quad \therefore$ Percetage of female = 100 – 40 – 60%

   The population of female in town = $7224520 \times \frac{60}{100} = 4334712$

4. Mr. Sharma earns per month = ₹ 15600

   His savings = 25% of his income = $15600 \times \frac{25}{100} = ₹ 3900$

   $\therefore$ The amount he spends per month = 15600 – 3900 = ₹ 11700

5. Monali's father perchased a bike for = ₹ 54000

   Cash payment made = 40% of the cost = $54000 \times \frac{40}{100} = ₹ 21600$

   So, he paid as cash = ₹ 21600

6. No. of runs scored by the team = 280

   The captain scored = 70 runs

   Percentage of runs scored by the captain = $\frac{70}{280} \times 100 = 25\%$

   So, the captain scored 25% runs.

7. A tin can contain of petrol = 20 litre

   Petrol lost due to leakage = 4 litre

   Percentage of loss petrol = $\frac{4}{20} \times 100$

   So, the percent of loss of petrol is 20%

8. Total working days in month = 24 days

   Piyush was absent from his school for = 6 days

   He ewas present in school for = 24 – 6 = 18 days

   His attendance percentage in the month = $\frac{18}{24} \times 100 = 75$

   So, Piyush's attendance percentage = 75%

9. No. of students in the school = 1250

No. of girls are in the school = 750

Percentage of girls in the school = $\frac{750}{1250} \times 100 = 60$

So, the percentage of girls in the school = 60%

10. Total staff of school = 1600

No. of people sent on vacation = 5% of its staff = $1600 \times \frac{5}{100} = 80$

So, 80 people were sent on vacation.

11. Suraj scored marks in Maths = 35 out of 50

His percentage marks in maths = $\frac{35}{50} \times 100 = 70\%$

Suraj scored marks in Hindi = 24 out of 40

His percentage marks in Hindi = $\frac{24}{40} \times 100 = 60\%$

Suraj performs better in Maths with 70% marks.

12. An examimee scored = 567 out of 900

He scored percentage marks = $\frac{567}{900} \times 100 = 63\%$

So, his percentage marks = 63%.

15. Temperature

Exercise 15.1

1. Imagine the temperatures given below. Tick one of the options that you would like to do at that temperature.

Do yourself.

2. (i) 0°C, 32°F

(ii) 37°C, 98.6°F

(iii) 100°C, 212°F

3. (i) 20°C

Degrees on 'F' scale = $\frac{9}{5}$ degrees on 'C' scale + 32

$= \left[\left(\frac{9}{5} \times \frac{20}{1}\right) + 32^\circ\right] \text{F} = [36 + 32]\,\text{F} = 68^\circ\,\text{F}$

So, 20°C is equal to 68°F temperature.

(ii) 50°C

Degreees on F scale = $\left[\left(\frac{9}{5} \times \frac{50}{1}\right) + 32^\circ\right] \text{F} = [90 + 32]\,\text{F} = 122^\circ\,\text{F}$

So, 50°C is equal to 122°F temperature.

(iii) 80°C

$$\text{Degrees on F scale} = \left[\left(\frac{9}{5} \times \frac{80}{1}\right) + 32^\circ\right] \text{F} = [144 + 32^\circ]\,\text{F} = 176^\circ\,\text{F}$$

So, 80°C is equal to 176°F temperature.

(iv) 95°C

$$\text{Degrees on F scale} = \left[\left(\frac{9}{5} \times \frac{95}{1}\right) + 32\right] \text{F} = [171 + 32] = 203^\circ\text{F}$$

So, 95°C is equal to 203°F temperature.

4. (i) 86°F

$$\text{Degrees on C scale} = (\text{Degrees on F scale} - 32) \times \frac{5}{9}$$

$$= \left[(86 - 32) \times \frac{5}{9}\right]^\circ \text{C} = \frac{54}{1} \times \frac{5}{9} = 30^\circ\,\text{C}$$

(ii) 131°F

$$\text{Degrees on C scale} = \left[(131 - 32) \times \frac{5}{9}\right] = \frac{99}{1} \times \frac{5}{9} = 11 \times 5 = 55^\circ\,\text{C}$$

(iii) 50°F

$$\text{Degrees on C scale} = \left[(50 - 32) \times \frac{5}{9}\right] = \frac{18}{1} \times \frac{5}{9} = 2 \times 5 = 10^\circ\,\text{C}$$

(iv) 104°F

$$\text{Degrees on C scale} = \left[(104 - 32) \times \frac{5}{9}\right] = \frac{72}{1} \times \frac{5}{9} = 8 \times 5 = 40^\circ\,\text{C}$$

5. Thermometer.
6. Celsius and Fahrenheit scales.

16. Volume

Exercise 16.1

1. Length of the cuboid = 1.5 m
   Breadth of the cuboid = 0.5 m
   Height of the cuboid = 2.5 m
   Volume of the cuboid = $l \times b \times h = 1.5 \times 0.5 \times 2.5 = 1.875$ cu. m
2. Side of the square box = 15 cm
   Volume of square box = $(\text{Side})^3 = (15)^3 = 3375$ cu.cm
3. Length of the box = 15 cm
   Breadth of the box = 13 cm
   Height of the box = 12.5 cm
   Volume of th box = $l \times b \times h = 15 \times 13 \times 12.5 = 2437.5\ \text{cm}^3$

4. Length of the aquarium = 125 cm

Breadth of the aquarium = 50 cm

Height of the aquarium = 30 cm

Volume of the aquarium = $l \times b \times h = 125 \times 50 \times 30 = 187500 \text{ cm}^3$

5. Length of the empty hall = 13 m

Breadth of the empty hall = 10.5 m

Height of the empty hall = 4 m

Volume of the hall = $l \times b \times h = 13 \times 10.5 \times 4 = 546 \text{ cm}^3$

6. Volume of cubical box = 512 cubic metre

Volume of cuboid = $(\text{Side})^3$

$$512 = (\text{Side})^3$$

$$\text{Side} = \sqrt[3]{512} = 8 \text{ m}$$

7. The volume of cuboid = 960 cm^3

Length of cuboid = 12 cm

Breadth of cuboid = 10 cm

Height = ?

Volume of cuboid = $l \times b \times h$

$$h = \frac{\text{Volume of cuboid}}{l \times b} = \frac{960}{12 \times 10} = 8 \text{ cm}$$

So, the height of the cuboid = 8 cm

8. The length of gift box = 28 cm

The breadth of gift box = 16 cm

The height of gift box = 12 cm

Volume of the box = $l \times b \times h = 28 \times 16 \times 12 = 5376 \text{ cm}^3$.

17. Data Handling

Exercise 17.1

1. A shopkeeper sold various books on five days of a week. Complete the table and answer the questions :

17, 20, 22, 14, 20

(i) Twenty two books were sold on Wednesday :

(ii) Tuesday and Friday are days on which the same number of books was sold.

(iii) The maximum number of books was sold on Wednesday.

(iv) 93 (Ninety three) books were sold in the week.

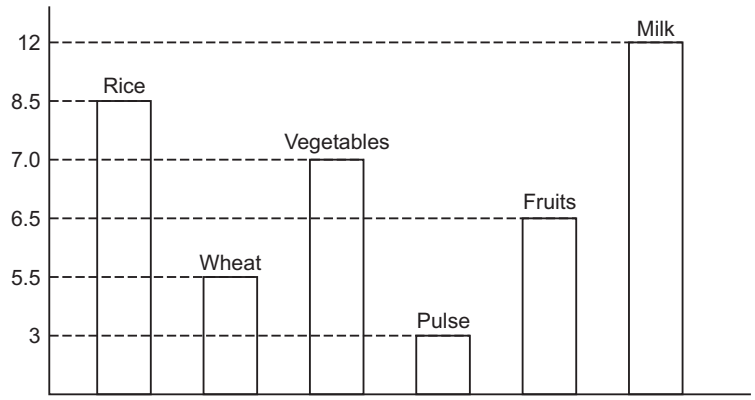
(v) The least number of books was sold on Thursday.

Exercise 17.2

1. (i) Like music is the most popular hobby and like football is the least popular hobby.
   (ii) Maximum girls are interested in like music hobby.
   (iii) Maximum boys are interested in like swimming hobby.
   (iv) Do yourself.
2. (i) 600 (Six hundred) people are living in first village.
   (ii) In third village the population is maximum.
   (iii) In fifth village the population is minimum.
   (iv) The difference between the populations of second village and fourth village is 100.
   (v) The total population of five villages is 3200 people.
3. (i) Two hundred fifty bicycles are running in the town.
   (ii) The difference between the numbers of scooters and motor cycles is 50.
   (iii) The difference between the numbers of buses and mini buses 100.
   (iv) The total number of vehicles is 1300 running in the town.

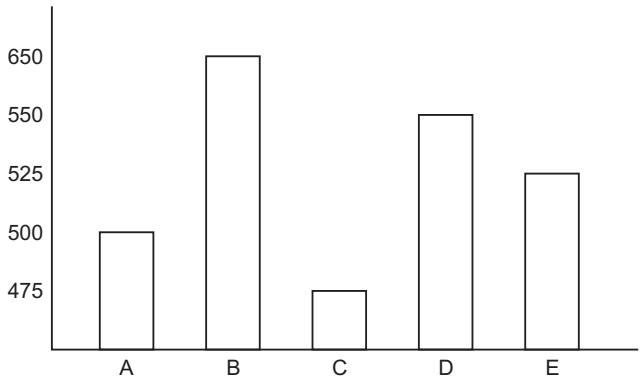
Exercise 17.3

1. (i) 18, 15, 12, 8, 20, 14 (ii) 18, 12, 14, 16, 9, 13 (iii) 14, 7, 3, 5, 11
2. 20, 23, 18, 12
   (i) 50 rupee coins are minimum in number. (ii) 2 rupee coins are maximum in number.
   (iii) 1 rupee coins are less than 5 rupee coins by 2 coins.
3. Weight (in kg) :



4. (i) Raju Verma is the weightiest person among the four.
   (ii) Rakesh Sharma is the least weightiest person.
   (iii) Anuj Chaudhary more is weightier than Rakesh Sharma by 10 kg.
   (iv) Rajeev Sharma is less weightier by 15 kg than Raju Verma.

5.



6. (i) 25 calls were made on Wednesday.
   (ii) The maximum number of calls was made on Tuesday.
   (iii) Total 120 calls were made in these four days.
   (iv) Call rate = ₹ 2 per call. So, total amount of bill = 120×2 = ₹ 240.
7. (i) Sunday was the hottest day.
   (ii) The difference between the highest and lowest temperatures is = $42 - 34 = 8°C$
   (iii) 34°C was the temperature on Tuesday.
   (iv) Thursday and Saturday were equally hot.

❑