

(d) Distance (d) = 35 km., Time taken (t) = 5 hrs.

$$\text{Speed } (s) = \frac{\text{Distance } (d)}{\text{Time } (t)} = \frac{35}{5} = 7 \text{ km/hr.}$$

3. (a) Speed (s) = 70 km/hr., Time taken (t) = 8 hrs.

$$\text{Distance } (d) = \text{speed } (s) \times \text{time } (t)$$

$$d = 70 \times 8 = 560 \text{ km.}$$

(b) Speed (s) = 85 km/hr., Time taken (t) = 7 hrs.

$$\text{Distance } (d) = \text{Speed } (s) \times \text{time } (t)$$

$$d = 85 \times 7 = 595 \text{ km.}$$

4. Speed (s) = 85 km/hr., Distance (d) = 382.5 km.

$$\text{Time taken } (t) = \frac{\text{Distance } (d)}{\text{Speed } (s)} = \frac{382.5}{85} = 4.5 \text{ hrs.}$$

5. Speed of the aeroplane (s) = 840 km/hr.

Time taken (t) = 3.5 hrs.

$$\text{Distance covered } (d) = \text{Speed } (s) \times \text{time } (t)$$

$$d = 840 \times 3.5 = 2940 \text{ km.}$$

Exercise 14.2

1. (a) $90 \text{ km/hr} = \frac{90 \times 1000}{60 \times 60} \text{ m/sec} = \frac{90 \times 10}{6 \times 6} \text{ m/sec} = 25 \text{ m/sec.}$

(b) $72 \text{ km/hr.} = \frac{72 \times 1000}{60 \times 60} \text{ m/sec} = \frac{72 \times 10}{6 \times 6} \text{ m/sec} = 20 \text{ m/sec.}$

(c) $36 \text{ km/hr.} = \frac{36 \times 1000}{60 \times 60} \text{ m/sec} = \frac{36 \times 10}{6 \times 6} \text{ m/sec} = 10 \text{ m/sec.}$

(d) $45 \text{ km/hr.} = \frac{45 \times 1000}{60 \times 60} \text{ m/sec} = \frac{45 \times 10}{6 \times 6} \text{ m/sec} = 12.5 \text{ m/sec.}$

(e) $144 \text{ km/hr} = \frac{144 \times 1000}{60 \times 60} \text{ m/sec} = 8 \times 5 \text{ m/sec} = 40 \text{ m/sec.}$

2. (a) $25 \text{ m/sec} = 25 \times \frac{1}{60 \times 60} \text{ km/hr.} = \frac{25 \times 3600}{1000} \text{ km/hr}$

$$= \frac{25 \times 36}{10} \text{ km/hr} = 90 \text{ km/hr.}$$

(b) $95 \text{ m/sec} = \frac{95 \times 1}{60 \times 60} \text{ km/hr} = \frac{95 \times 3600}{1000} \text{ km/hr}$

$$= \frac{95 \times 36}{10} \text{ km/hr} = 342 \text{ km/hr.}$$

$$\begin{aligned} \text{(c) } 100 \text{ m/sec} &= \frac{100 \times \frac{1}{1000} \text{ km}}{\frac{1}{60 \times 60} \text{ hr}} \\ &= \frac{100 \times 3600}{1000} \text{ km/hr.} \\ &= 10 \times 36 \text{ km/hr.} = 360 \text{ km/hr.} \end{aligned}$$

$$\begin{aligned} \text{(d) } 45 \text{ m/sec.} &= 45 \times \frac{18}{5} \text{ km/hr} \\ &= 9 \times 18 \text{ km/hr} = 162 \text{ km/hr.} \end{aligned}$$

$$\begin{aligned} \text{(e) } 35 \text{ m/sec.} &= 35 \times \frac{18}{5} \text{ km/hr} \\ &= 7 \times 18 \text{ km/hr} = 126 \text{ km/hr.} \end{aligned}$$

3. Distance covered (d) = 360 km.

Time taken (t) = 5 hrs.

$$\begin{aligned} \text{Speed of the truck (s)} &= \frac{d}{t} = \frac{360}{5} = 72 \text{ km/h.} \\ &= \frac{8}{18} \times \frac{5}{2} \text{ m/sec.} \\ &= 4 \times 5 = 20 \text{ m/sec.} \end{aligned}$$

So, the speed of the train is 20 m/sec.

4. Distance covered (d) = 24000 m.

Time taken (t) = 300 sec.

$$\begin{aligned} \text{Speed of the train} &= \frac{d}{t} = \frac{24000}{300} = 80 \text{ m/sec.} \\ &= \frac{16}{8} \times \frac{18}{1} \text{ km/hr.} = 288 \text{ km/hr.} \end{aligned}$$

So, the speed of the train is 288 km/hr.

MCQ's

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

15. Simple Interest

Exercise 15.1

1. (a) $P = ₹ 3000$, $T = 2$ years, $R = 5\%$

$$\text{S.I.} = \frac{P \times R \times T}{100} = \frac{3000 \times 5 \times 2}{100} = ₹ 300.$$

(b) $P = ₹ 5000$, $T = 5$ years, $R = 10\%$

$$\text{S.I.} = \frac{P \times R \times T}{100} = \frac{5000 \times 10 \times 5}{100} = ₹ 2500.$$

(c) $P = ₹ 2600$, $T = 3$ years, $R = 8\%$

$$\text{S.I.} = \frac{P \times R \times T}{100} = \frac{2600 \times 8 \times 3}{100} = ₹ 624.$$

$$(d) P = ₹ 1800, T = 2\frac{1}{2} \text{ years} = \frac{5}{2} \text{ years}, R = 5\frac{1}{2}\% = \frac{11}{2}\%$$

$$\begin{aligned} \text{S.I.} &= \frac{P \times R \times T}{100} = \frac{1800 \times \frac{11}{2} \times \frac{5}{2}}{100} \\ &= 18 \times \frac{11}{2} \times \frac{5}{2} = ₹ 247.5. \end{aligned}$$

$$(e) P = ₹ 10,000, T = 2\frac{1}{2} \text{ years} = \frac{5}{2} \text{ years}, R = 8\%$$

$$\begin{aligned} \text{S.I.} &= \frac{P \times R \times T}{100} = \frac{10000 \times 8 \times \frac{5}{2}}{100} \\ &= 100 \times 4 \times 5 = ₹ 2000. \end{aligned}$$

$$(f) P = ₹ 8,000, R = 7\%$$

$$T = 2 \text{ years } 4 \text{ months}$$

$$= \left(2 + \frac{4}{12}\right) \text{ years} = \left(2 + \frac{1}{3}\right) \text{ years} = \frac{7}{3} \text{ years}$$

$$\text{S.I.} = \frac{P \times R \times T}{100} = \frac{8000 \times 7 \times \frac{7}{3}}{100} = 80 \times 7 \times \frac{7}{3} = ₹ 1306.67.$$

$$2. P = ₹ 18,000, R = 4\%, T = 5 \text{ years}$$

$$\text{S.I.} = \frac{P \times R \times T}{100} = \frac{18000 \times 4 \times 5}{100} = ₹ 3600$$

So, Jagdish will get the interest of ₹ 3600 after 5 years.

$$3. P = ₹ 4000, R = 12\%, T = 4 \text{ years}$$

$$\begin{aligned} \text{S.I.} &= \frac{P \times R \times T}{100} = \frac{4000 \times 12 \times 4}{100} \\ &= 40 \times 12 \times 4 = ₹ 1920 \end{aligned}$$

So, Shivani will get the interest of ₹ 1920 after 4 years.

$$4. P = ₹ 1000, R = 3\%, T = 4\frac{1}{2} \text{ years} = \frac{9}{2} \text{ years}$$

$$\text{S.I.} = \frac{P \times R \times T}{100} = \frac{1000 \times 3 \times \frac{9}{2}}{100} = 10 \times 3 \times \frac{9}{2} = ₹ 135$$

So, Manjeet got ₹ 135 as a simple interest.

$$5. P = ₹ 18000, R = 8\%, T = 3\frac{1}{2} \text{ years} = \frac{7}{2} \text{ years}$$

$$\text{S.I.} = \frac{P \times R \times T}{100} = \frac{18000 \times 8 \times \frac{7}{2}}{100} = 180 \times 8 \times \frac{7}{2} = ₹ 5040$$

So, Ajay should pay ₹ 5040 back to bank.

$$6. P = ₹ 4000, R = 4\%,$$

$$T = 7 \text{ months } 15 \text{ days} = \frac{7}{12} \text{ years} + \frac{15}{30 \times 12} \text{ years} = \left(\frac{7}{12} + \frac{1}{24}\right) \text{ years}$$

$$= \left(\frac{14 + 1}{24}\right) \text{ years} = \frac{15}{24} \text{ years} = \frac{5}{8} \text{ years}$$

$$\begin{aligned} \text{S.I.} &= \frac{P \times R \times T}{100} = \frac{4000 \times 4 \times \frac{5}{8}}{100} \\ &= 40 \times 4 \times \frac{5}{8} = ₹ 100 \end{aligned}$$

So, Sumit got ₹ 100 as a simple interest.

7. $P = ₹ 7200, R = 7\%$,

$$\begin{aligned} T &= 11 \text{ months } 15 \text{ days} \\ &= \left(\frac{11}{12} \text{ years} + \frac{15 \text{ days}}{12 \times 30} \right) = \left(\frac{11}{12} + \frac{1}{24} \right) \text{ years} \\ &= \frac{22+1}{24} \text{ years} = \frac{23}{24} \text{ years} \\ \text{S.I.} &= \frac{7200 \times 7 \times \frac{23}{24}}{100} = 72 \times 7 \times \frac{23}{24} = ₹ 483 \end{aligned}$$

So, Ram should pay ₹ 483 back to Rakesh.

Exercise 15.2

1. (a) $P = ₹ 800, R = 6\%, T = 3 \text{ years}$

$$\text{S.I.} = \frac{P \times R \times T}{100} = \frac{800 \times 6 \times 3}{100} = ₹ 144$$

$$\text{Amount} = P + \text{S.I.} = 800 + 144 = ₹ 944.$$

- (b) $P = ₹ 2490, R = 5\%, T = 1\frac{1}{3} \text{ years}, T = \frac{4}{3} \text{ years}.$

$$\begin{aligned} \text{S.I.} &= \frac{P \times R \times T}{100} = \frac{2490 \times 5 \times \frac{4}{3}}{100} \\ &= \frac{81 \times 5 \times 4}{10} = 81 \times 2 = ₹ 162 \end{aligned}$$

$$\text{Amount} = P + \text{S.I.} = 2490 + 162 = ₹ 2652.$$

- (c) $P = ₹ 6550, R = 2.5\%, T = 6 \text{ years}$

$$\begin{aligned} \text{S.I.} &= \frac{P \times R \times T}{100} = \frac{6550 \times 2.5 \times 6}{100} \\ &= \frac{6550 \times \overset{1}{\cancel{25}} \times 6}{\underset{4}{\cancel{100} \times 10}} = \frac{655 \times 6}{4} = ₹ 982.5 \end{aligned}$$

$$\text{Amount} = P + \text{S.I.} = 6550 + 982.5 = ₹ 7532.5.$$

- (d) $P = ₹ 5000, T = 4 \text{ years}, R = 4\%$

$$\text{S.I.} = \frac{P \times R \times T}{100} = \frac{5000 \times 4 \times 4}{100} = 50 \times 16 = ₹ 800$$

$$\text{Amount} = P + \text{S.I.} = 5000 + 800 = ₹ 5800$$

So, Ramesh will get ₹ 5800 after 4 years.

3. $P = ₹ 48,000, R = 8\%, T = 5 \text{ years}$

$$\begin{aligned} \text{S.I.} &= \frac{P \times R \times T}{100} = \frac{48000 \times 8 \times 5}{100} \\ &= 480 \times 8 \times 5 = 19200 \end{aligned}$$

Amount = $P + \text{S.I.} = 48000 + 19200 = ₹ 67200$
 So, Mr. Khanna will get ₹ 67200 back after 5 years.

4. $P = ₹ 21,000, R = 12\frac{1}{2}\%, R = \frac{25}{2}\%$,

$T = 8 \text{ months} = \frac{8}{12} \text{ years} = \frac{2}{3} \text{ years}$

$$\text{S.I.} = \frac{P \times R \times T}{100} = \frac{21000 \times \frac{25}{2} \times \frac{2}{3}}{100}$$

$$= 210 \times \frac{25}{3} = 70 \times 25 = ₹ 1750$$

Amount = $P + \text{S.I.} = 21000 + 1750 = 22750$
 So, Aditya should pay ₹ 22,750 back to clear his debt.

MCQ's

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

Worksheet

S. No.	Date	Money Deposited/Withdrawn	Total
1.	4th Jan, 2013	Deposited ₹ 2000.00	₹ 2000
2.	8th Feb, 2013	Deposited ₹ 0560.00	₹ 2560
3.	10th March, 2013	Withdrawn ₹ 0376.00	₹ 2184
4.	16th June, 2013	Withdrawn ₹ 0500.00	₹ 1684
5.	23rd December, 2013	Deposited ₹ 0235.00	₹ 1919.5

- (a) $P = ₹ 1919.5$
 So, the total amount is ₹ 1919.5 at the end of the year.
- (b) $P = 1919.5, R = 5\%, T = 1 \text{ year}$

$$\text{S.I.} = \frac{P \times R \times T}{100} = \frac{1919.5 \times 5 \times 1}{100}$$

$$= 95.975 = ₹ 95.98$$
 Amount = $P + \text{S.I.} = 1919.5 + 95.98 = ₹ 2015.48$

16. Money and Bills

Exercise 16.1

1. (a) ₹ 0.55
 ₹ 1 = 100 paise
 ₹ 0.55 = 0.55×100 paise = 55 paise
- (b) ₹ 6.40
 ₹ 1 = 100 paise
 ₹ 6.40 = 6.40×100 paise = 640 paise

- (c) ₹ 9.85
 ₹ 1 = 100 paise
 ₹ 9.85 = 9.85×100 paise = 985 paise
- (d) ₹ 0.79
 ₹ 1 = 100 paise
 ₹ 0.79 = 0.79×100 paise = 79 paise
- (e) ₹ 0.89
 ₹ 1 = 100 paise
 ₹ 0.89 = 0.89×100 paise = 89 paise

2. (a) 45 paise

$$1 \text{ paise} = ₹ \frac{1}{100}$$

$$45 \text{ paise} = ₹ \frac{45}{100} = ₹ 0.45$$

(c) 16 paise

$$1 \text{ paise} = ₹ \frac{1}{100}$$

$$16 \text{ paise} = ₹ \frac{16}{100} = ₹ 0.16$$

(e) 61351 paise

$$1 \text{ paise} = ₹ \frac{1}{100}$$

$$61351 \text{ paise} = ₹ \frac{61351}{100} = ₹ 613.51$$

(b) 780 paise

$$1 \text{ paise} = ₹ \frac{1}{100}$$

$$780 \text{ paise} = ₹ \frac{780}{100} = ₹ 7.8$$

(d) 9380 paise

$$1 \text{ paise} = ₹ \frac{1}{100}$$

$$9380 \text{ paise} = ₹ \frac{9380}{100} = ₹ 93.80$$

(f) 920 paise

$$1 \text{ paise} = ₹ \frac{1}{100}$$

$$920 \text{ paise} = ₹ \frac{920}{100} = ₹ 9.2$$

Exercise 16.2

1. (a)

$$\begin{array}{r} ₹ 357.63 \\ + ₹ 29.89 \\ \hline ₹ 387.52 \end{array}$$

(b)

$$\begin{array}{r} ₹ 56.50 \\ + ₹ 123.90 \\ \hline ₹ 180.40 \end{array}$$

(c)

$$\begin{array}{r} ₹ 69.39 \\ + ₹ 45.72 \\ \hline ₹ 115.11 \end{array}$$

(d)

$$\begin{array}{r} ₹ 967.50 \\ + ₹ 216.75 \\ \hline ₹ 1184.25 \end{array}$$

(e)

$$\begin{array}{r} ₹ 126.50 \\ + ₹ 675.15 \\ \hline ₹ 801.65 \end{array}$$

(f)

$$\begin{array}{r} ₹ 371.70 \\ + ₹ 145.75 \\ \hline ₹ 517.45 \end{array}$$

2. (a)

$$\begin{array}{r} ₹ 225.65 \\ - ₹ 65.63 \\ \hline ₹ 160.02 \end{array}$$

(b)

$$\begin{array}{r} ₹ 360.20 \\ - ₹ 284.50 \\ \hline ₹ 75.70 \end{array}$$

(c)

$$\begin{array}{r} ₹ 1000.00 \\ - ₹ 290.20 \\ \hline ₹ 709.80 \end{array}$$

(d)

$$\begin{array}{r} ₹ 110.75 \\ - ₹ 89.11 \\ \hline ₹ 21.64 \end{array}$$

(e)

$$\begin{array}{r} ₹ 400.00 \\ - ₹ 375.20 \\ \hline ₹ 24.80 \end{array}$$

(f)

$$\begin{array}{r} ₹ 1000.00 \\ - ₹ 686.75 \\ \hline ₹ 313.25 \end{array}$$

3.

$$\begin{array}{r} ₹ \quad \text{paise} \\ 25.45 \\ + 173.89 \\ \hline 199.34 \end{array}$$

∴ 25 rupees 45 paise + 173 rupees 89 paise = 199 rupees 34 paise.

4.

₹	paise
5 0 0 . 0 0	
- 3 4 5 . 5 6	

1 5 4 . 4 4	

$$\begin{aligned} \therefore 500 \text{ rupees} - 345 \text{ rupees } 56 \text{ paise} \\ = 154 \text{ rupees } 44 \text{ paise.} \end{aligned}$$

5.

₹	paise
1 8 9 . 6 7	
+ 3 4 4 . 2 0	

5 3 3 . 8 7	

$$\therefore \text{The sum of ₹ 189.67 and 344.20 is ₹ 533.87.}$$

Exercise 16.3

$$\begin{aligned} 1. \text{ Cost of a purse} &= ₹ 6 0 7 . 5 0 \\ \text{Cost of a birthday card} &= + ₹ 6 7 . 5 0 \\ \text{Total amount spent} &= ₹ \underline{6 7 5 . 0 0} \end{aligned}$$

So, Radhika spent ₹ 675 in all.

$$\begin{aligned} 2. \text{ Cost of the old scooter} &= ₹ 5 0 9 5 . 0 0 \\ \text{The money spent on repairing} &= + ₹ 5 6 3 . 5 0 \\ \text{Total amount spent} &= ₹ \underline{5 6 5 8 . 5 0} \end{aligned}$$

So, Mr. Sharma spent ₹ 5658 on the scooters.

$$\begin{aligned} 3. \text{ Cost of potatoes} &= ₹ 3 0 . 3 0 \\ \text{Cost of onions} &= ₹ 2 5 . 7 5 \\ \text{Cost of tomatoes} &= + ₹ 1 5 . 7 0 \\ \text{Total amount spent} &= ₹ \underline{7 1 . 7 5} \end{aligned}$$

So, Mrs. Khanna spent ₹ 71.75 in all.

$$\begin{aligned} 4. \text{ The money Rohan had} &= ₹ 1 0 0 0 . 0 0 \\ \text{Cost of shoes} &= - ₹ 8 0 5 . 7 5 \\ \text{Total amount left} &= ₹ \underline{1 9 4 . 2 5} \end{aligned}$$

So, the amount left with him was ₹ 194.25.

$$\begin{aligned} 5. \text{ The money gave} &= ₹ 1 0 0 0 . 0 0 \\ \text{Cost of the table lamp} &= - ₹ 6 4 9 . 5 0 \\ &= ₹ \underline{3 5 0 . 5 0} \end{aligned}$$

So, the shopkeeper will return ₹ 350.50 to Nidhi.

$$\begin{aligned} 6. \text{ Cost of the belt} &= ₹ 2 7 7 . 0 0 \\ \text{Cost of the wallet} &= + ₹ 1 5 0 . 7 5 \\ \text{The amount spent} &= ₹ \underline{4 2 7 . 7 5} \end{aligned}$$

The money Deepak had = ₹ 5 0 0 . 0 0

The amount spent = - ₹ 4 2 7 . 7 5

The amount left = ₹ 7 2 . 2 5

So, the amount left with him was ₹ 72.25.

Exercise 16.4

$$\begin{array}{r} 1. \text{ (a) } ₹ \quad 8 4 7 . 5 0 \\ \qquad \qquad \qquad \times 6 \\ \hline ₹ 5 0 8 5 . 0 0 \end{array}$$

$$\therefore 847.60 \times 6 = ₹ 5085.$$

$$\begin{array}{r} \text{(b) } ₹ \quad 7 6 0 . 8 5 \\ \qquad \qquad \qquad \times 3 \\ \hline ₹ 2 2 8 2 . 5 5 \end{array}$$

$$\therefore ₹ 760.85 \times 3 = ₹ 2282.55$$

$$\begin{array}{r} \text{₹ } 365.20 \\ \times 9 \\ \hline \text{₹ } 3286.80 \end{array}$$

$$\therefore \text{₹ } 360.20 \times 9 = \text{₹ } 3286.80$$

$$\begin{array}{r} \text{₹ } 655.65 \\ \times 5 \\ \hline \text{₹ } 3278.25 \end{array}$$

$$\therefore \text{₹ } 655.65 \times 5 = \text{₹ } 3278.25.$$

$$\begin{array}{r} \text{₹ } 126.90 \\ \times 15 \\ \hline 63450 \\ 12690 \times \\ \hline \text{₹ } 1903.50 \end{array}$$

$$\therefore \text{₹ } 126.90 \times 15 = \text{₹ } 1903.50$$

$$\begin{array}{r} \text{₹ } 167.55 \\ \times 4 \\ \hline \text{₹ } 670.20 \end{array}$$

$$\therefore \text{₹ } 167.55 \times 4 = \text{₹ } 670.20.$$

2. (a)

$$\begin{array}{r} 4 \overline{)7631.20} \overline{)1907.80} \\ \underline{-4} \\ 36 \\ \underline{-36} \\ 31 \\ \underline{-28} \\ 32 \\ \underline{-32} \\ 0 \\ \underline{-0} \\ \times \end{array}$$

$$\therefore 7631.20 \div 4 = \text{₹ } 1907.80.$$

(b)

$$\begin{array}{r} 11 \overline{)8341.30} \overline{)758.30} \\ \underline{-77} \\ 64 \\ \underline{-55} \\ 91 \\ \underline{-88} \\ 33 \\ \underline{-33} \\ 0 \\ \underline{-0} \\ \times \end{array}$$

$$\therefore \text{₹ } 8341.30 \div 11 = \text{₹ } 758.30.$$

(c)

$$\begin{array}{r} 6 \overline{)13932.96} \overline{)2322.16} \\ \underline{-12} \\ 19 \\ \underline{-18} \\ 13 \\ \underline{-12} \\ 12 \\ \underline{-12} \\ 9 \\ \underline{-6} \\ 36 \\ \underline{-36} \\ \times \end{array}$$

$$\therefore \text{₹ } 13932.96 \div 6 = \text{₹ } 2322.16.$$

(d)

$$\begin{array}{r} 15 \overline{)141.90} \overline{)9.46} \\ \underline{-135} \\ 69 \\ \underline{-60} \\ 90 \\ \underline{-90} \\ \times \end{array}$$

$$\therefore \text{₹ } 141.90 \div 15 = \text{₹ } 9.46.$$

$$\begin{array}{r}
 5 \overline{)945.55} (189.11 \\
 \underline{-5} \\
 44 \\
 \underline{-40} \\
 45 \\
 \underline{-45} \\
 5 \\
 \underline{-5} \\
 5 \\
 \underline{-5} \\
 \times
 \end{array}$$

$$\therefore ₹ 945.55 \div 5 = 189.11.$$

$$\begin{array}{r}
 3 \overline{)408.75} (136.25 \\
 \underline{-3} \\
 10 \\
 \underline{-9} \\
 18 \\
 \underline{-18} \\
 7 \\
 \underline{-6} \\
 15 \\
 \underline{-15} \\
 \times
 \end{array}$$

$$\therefore ₹ 408.75 \div 3 = ₹ 136.25.$$

Exercise 16.5

- \therefore The cost of 7 notebook = ₹ 3949.75
 \therefore The cost of 1 notebook = ₹ $3949.75 \div 7 = ₹ 564.25$

$$\begin{array}{r}
 7 \overline{)3949.75} (564.25 \\
 \underline{-35} \\
 44 \\
 \underline{-42} \\
 29 \\
 \underline{-28} \\
 17 \\
 \underline{-14} \\
 35 \\
 \underline{-35} \\
 \times
 \end{array}$$

So, the cost of 1 notebook is ₹ 564.25.

- \therefore The cost of 1 packet = ₹ 2450
 \therefore The price of 8 packets = ₹ 24.50×8
 $= ₹ 196.00$

So, the cost of 8 packets of milk is ₹ 196.

- \therefore Cost of 1 silver cup = ₹ 1095.70
 \therefore Cost of 12 silver cups = ₹ 1095.70×12
 $= ₹ 13148.40$

So, Ramesh paid ₹ 13148.40 for 12 silver cups.

- \therefore No. of pen for ₹ 6 = 1
 \therefore No. of pens for ₹ 176.20 = ₹ $176.20 \div 6$
 $= \frac{176.20}{6} = \frac{17620}{6 \times 100}$
 $= \frac{17620}{600} = 29$ pens.

Remainder = 220

- \therefore 220 paise = ₹ 2.20 will be left and 29 pens can be bought.

$$\begin{array}{r}
 ₹ \quad 24.50 \\
 ₹ \quad \quad \times 8 \\
 \hline
 ₹ 196.00
 \end{array}$$

$$\begin{array}{r}
 ₹ \quad 1095.70 \\
 \quad \quad \times 12 \\
 \hline
 219140 \\
 109570 \times \\
 \hline
 ₹ 13148.40
 \end{array}$$

$$\begin{array}{r}
 600 \overline{)17620} (29 \\
 \underline{-120} \\
 5620 \\
 \underline{-5400} \\
 220 \\
 \underline{-220} \\
 \times
 \end{array}$$

5. \therefore Cost of 25 kg. of rice = ₹ 5096.25
 \therefore Cost of 1 kg of rice = ₹ $5096.25 \div 25$
= ₹ 203.85
So, the cost of 1 kg of rice is ₹ 203.85.

$$\begin{array}{r} 25 \overline{)5096.25} (203.85 \\ \underline{-50} \\ 96 \\ \underline{-75} \\ 212 \\ \underline{-200} \\ 125 \\ \underline{-125} \\ \times \end{array}$$

MCQ's

1. (a) 2. (b) 3. (b)

Worksheet

S. No.	Description	Quantity	Rate in rupees (₹)	Total cost (₹)
1.	T-shirts	4	110.00	440.00
2.	Jeans	2 pair	350.00	700.00
3.	Shoes	1 pair	785.00	785.00
4.	Slippers	3 pair	125.00	375.00
5.	Socks	5 pair	28.00	140.00
Grand Total				2,440.00

17. Measurement

Exercise 17.1

1. (a) 12 km. 500 m
1 km = 1000 m.
12 km. 50 m = 12 km + 500 m
= 12×1000 m + 500 m
= 12000 m + 500 m = 12500 m.
- (b) 54 m 76 cm
1 m = 100 cm
54 cm 76 cm = 54 m + 76 cm
= 54×100 cm + 76 cm
= 5400 cm + 76 cm = 5476 cm.
- (c) 15 hm
1 hm = 100 m
15 hm = 15×100 m = 1500 m.
- (d) 7.2 g
1 g = 1000 mg
7.2 g = 7.2×1000 mg = 7200 mg.

- (e) 8 hg 40 g
 $1 \text{ hg} = 100 \text{ g}$
 $8 \text{ hg } 40 \text{ g} = 8 \text{ hg} + 40 \text{ g} = 8 \times 100 \text{ g} + 40 \text{ g}$
 $= 800 \text{ g} + 40 \text{ g} = 840 \text{ g}.$
- (f) 45 kg 800 g
 $1 \text{ kg} = 1000 \text{ g}$
 $45 \text{ kg } 800 \text{ g} = 45 \text{ kg} + 800 \text{ g} = 45 \times 1000 \text{ g} + 800 \text{ g}$
 $= 45000 \text{ g} + 800 \text{ g} = 45800 \text{ g}.$
- (g) 8 kl
 $1 \text{ kl} = 1000 \text{ l}$
 $8 \text{ kl} = 8 \times 1000 \text{ l} = 8000 \text{ l}.$
- (h) 45.5 l
 $1 \text{ l} = 1000 \text{ ml}$
 $45.5 \text{ l} = 45.5 \times 1000 \text{ ml}$
 $= 45500.0 \text{ ml} = 45500 \text{ ml}.$
- (i) 99 l 99 ml
 $1 \text{ l} = 1000 \text{ ml}$
 $99 \text{ l } 99 \text{ ml} = 99 \text{ l} + 99 \text{ ml}$
 $= 99 \times 1000 \text{ ml} + 99 \text{ ml}$
 $= 99000 \text{ ml} + 99 \text{ ml} = 99099 \text{ ml}.$

2. (a) 725 cm
 $1 \text{ cm} = \frac{1}{100} \text{ m}$
 $725 \text{ cm} = \frac{725}{100} \text{ m} = 7.25 \text{ m}.$
- (b) 3 dam 80 dm
 $1 \text{ dm} = \frac{1}{100} \text{ dam}$
 $3 \text{ dam } 80 \text{ dm} = 3 \text{ dam} + 80 \text{ dm} = 3 \text{ dam} + \frac{80}{100} \text{ dam}$
 $= 3 \text{ dam} + 0.80 \text{ dam} = 3.80 \text{ dam}.$
- (c) 978 m
 $1 \text{ m} = \frac{1}{1000} \text{ km}$
 $978 \text{ m} = \frac{978}{1000} \text{ km} = 0.978 \text{ km}.$
- (d) 1578 mg
 $1 \text{ mg} = \frac{1}{1000} \text{ g}$
 $1578 \text{ mg} = \frac{1578}{1000} \text{ g} = 1.578 \text{ g}.$
- (e) 15 g 980 mg
 $1 \text{ mg} = \frac{1}{1000} \text{ g}$
 $15 \text{ g } 980 \text{ mg} = 15 \text{ g} + 980 \text{ mg} = 15 \text{ g} + \frac{980}{1000} \text{ g}$
 $= 15 \text{ g} + 0.980 \text{ g} = 15.980 \text{ g}.$

- (f) 2850 g
 $1 \text{ g} = \frac{1}{1000} \text{ kg}$
 $2850 \text{ g} = \frac{2850}{1000} \text{ kg} = 2.850 \text{ kg}.$
- (g) $3 \text{ dal } 50 \text{ dl}$
 $1 \text{ dl} = \frac{1}{100} \text{ dal}$
 $3 \text{ dal } 50 \text{ dl} = 3 \text{ dal} + 50 \text{ dl} = 3 \text{ dal} + \frac{50}{100} \text{ dal}$
 $= 3 \text{ dal} + 0.50 \text{ dal} = 3.50 \text{ dal}.$
- (h) 2950 l
 $1 \text{ l} = \frac{1}{1000} \text{ kl}$
 $2950 \text{ l} = \frac{2950}{1000} \text{ kl} = 2.950 \text{ kl}.$
- (i) $9 \text{ l } 38 \text{ cl}$
 $1 \text{ cl} = \frac{1}{100} \text{ l}$
 $9 \text{ l } 38 \text{ cl} = 9 \text{ l} + 38 \text{ cl} = 9 \text{ l} + \frac{38}{100} \text{ l}$
 $= 9 \text{ l} + 0.38 \text{ l} = 9.38 \text{ l}.$

Exercise 17.2

1. (a)
$$\begin{array}{r} 9 . 6 1 \text{ kg} \\ + 6 . 7 5 \text{ kg} \\ \hline 1 6 . 3 6 \text{ kg} \end{array}$$
 So, $9.61 \text{ kg} + 6.75 \text{ kg} = 16.36 \text{ kg}.$

(b) $1 \text{ g} = \frac{1}{1000} \text{ kg}$
 $9 \text{ kg } 660 \text{ g} = 9 \text{ kg} + 660 \text{ g} = 9 \text{ kg} + \frac{660}{1000} \text{ kg}$
 $= 9 \text{ kg} + 0.660 \text{ kg} = 9.660 \text{ kg}.$
and $18 \text{ kg } 85 \text{ g} = 18 \text{ kg} + 85 \text{ g} = 18 \text{ kg} + \frac{85}{1000} \text{ kg}$
 $= 18 \text{ kg} + 0.085 \text{ kg} = 18.085 \text{ kg}.$

$$\begin{array}{r} 9 . 6 6 0 \text{ kg} \\ + 1 8 . 0 8 5 \text{ kg} \\ \hline 2 7 . 7 4 5 \text{ kg} \end{array}$$

$\therefore 9 \text{ kg } 660 \text{ g} + 18 \text{ kg } 85 \text{ g} = 27.745 \text{ kg}.$

(c) $1 \text{ l} = \frac{1}{1000} \text{ kl}$
 $79 \text{ kl } 35 \text{ l} = 79 \text{ kl} + 35 \text{ l} = 79 \text{ kl} + \frac{35}{1000} \text{ kl}$
 $= 79 \text{ kl} + 0.035 \text{ kl}$
 $= 79.035 \text{ kl}$

$$\begin{aligned} \text{and } 80 \text{ k}l \text{ } 10 \text{ l} &= 80 \text{ k}l + 10 \text{ l} = 80 \text{ k}l + \frac{10}{1000} \text{ k}l \\ &= 80 \text{ k}l + 0.010 \text{ k}l = 80.010 \text{ k}l \end{aligned}$$

$$\begin{array}{r} 79.035 \text{ k}l \\ + 95.000 \text{ k}l \\ + 80.010 \text{ k}l \\ \hline 254.045 \text{ k}l \end{array}$$

$$\therefore 79 \text{ k}l \text{ } 35 \text{ l} + 95 \text{ k}l + 80 \text{ k}l \text{ } 10 \text{ l} = 254.045 \text{ k}l.$$

$$(d) \quad 1 \text{ mm} = \frac{1}{10} \text{ cm}.$$

$$\begin{aligned} 9 \text{ cm } 8 \text{ mm} &= 9 \text{ cm} + 8 \text{ mm} \\ &= 9 \text{ cm} + \frac{8}{10} \text{ cm} = 9 \text{ cm} + 0.8 \text{ cm} = 9.8 \text{ cm} \end{aligned}$$

$$6 \text{ mm} = \frac{6}{10} \text{ cm} = 0.6 \text{ cm}.$$

$$\begin{aligned} \text{and } 10 \text{ cm } 5 \text{ mm} &= 10 \text{ cm} + 5 \text{ mm} = 10 \text{ cm} + \frac{5}{10} \text{ cm} \\ &= 10 \text{ cm} + 0.5 \text{ cm} = 10.5 \text{ cm}. \end{aligned}$$

$$\begin{array}{r} 9.8 \text{ cm} \\ + 0.6 \text{ cm} \\ + 10.5 \text{ cm} \\ \hline 20.9 \text{ cm} \end{array}$$

$$\therefore 9 \text{ cm } 8 \text{ mm} + 6 \text{ mm} + 10 \text{ cm } 5 \text{ mm} = 20.9 \text{ cm}.$$

$$(e) \quad 1 \text{ m} = \frac{1}{1000} \text{ km}$$

$$63 \text{ m} = 0.063 \text{ km}.$$

$$\begin{array}{r} 85.930 \text{ km} \\ + 0.063 \text{ km} \\ \hline 85.993 \text{ km} \end{array}$$

$$\therefore 85.93 \text{ km} + 63 \text{ m} = 85.993 \text{ km}.$$

$$(f) \quad 1 \text{ ml} = \frac{1}{1000} \text{ l}$$

$$99 \text{ l } 65 \text{ ml} = 99 \text{ l} + 65 \text{ ml} = 99 \text{ l} + \frac{65}{1000} \text{ l} = 99 \text{ l} + 0.065 \text{ l} = 99.065 \text{ l}$$

$$90 \text{ ml} = \frac{90}{1000} \text{ l} = 0.090 \text{ l}$$

$$\text{and } 10 \text{ l } 86 \text{ ml} = 10 \text{ l} + 86 \text{ ml} = 10 \text{ l} + \frac{86}{1000} \text{ l} = 10 \text{ l} + 0.086 \text{ l} = 10.086 \text{ l}$$

$$\begin{array}{r} 99.065 \text{ l} \\ + 0.090 \text{ l} \\ + 10.086 \text{ l} \\ \hline 109.241 \text{ l} \end{array}$$

$$\therefore 99 \text{ l } 65 \text{ ml} + 90 \text{ ml} + 10 \text{ l } 86 \text{ ml} = 109.241 \text{ l}.$$

2. (a)

$$\begin{array}{r} 9.690 \text{ kg} \\ - 6.750 \text{ kg} \\ \hline 2.940 \text{ kg} \end{array}$$

$$\therefore 9.690 \text{ kg} - 6.75 \text{ kg} = 2.940 \text{ kg}.$$

(b) $1 \text{ m} = \frac{1}{1000} \text{ km}.$

$$10 \text{ km } 625 \text{ m} = 10 \text{ km} + 625 \text{ m} = 10 \text{ km} + \frac{625}{1000} \text{ km}$$

$$= 10 \text{ km} + 0.625 \text{ km} = 10.625 \text{ km}$$

$$12 \text{ km } 125 \text{ m} = 12 \text{ km} + 125 \text{ m} = 12 \text{ km} + \frac{125}{1000} \text{ km}$$

$$= 12 \text{ km} + 0.125 \text{ km} = 12.125 \text{ km}.$$

$$\begin{array}{r} 12.125 \text{ km} \\ - 10.625 \text{ km} \\ \hline 1.500 \text{ km} \end{array}$$

$$\therefore 12 \text{ km } 125 \text{ m} - 10 \text{ km. } 625 \text{ m} = 1.500 \text{ km}.$$

(c) $1 \text{ cm} = \frac{1}{100} \text{ m}$

$$89 \text{ cm} = \frac{89}{100} \text{ m} = 0.89 \text{ m}.$$

$$\text{and } 2 \text{ m } 5 \text{ cm} = 2 \text{ m} + 5 \text{ cm} = 2 \text{ m} + \frac{5}{100} \text{ m} = 2 \text{ m} + 0.05 \text{ m} = 2.05 \text{ m}.$$

$$\begin{array}{r} 2.05 \text{ m} \\ - 0.89 \text{ m} \\ \hline 1.16 \text{ m} \end{array}$$

$$\therefore 2 \text{ m } 5 \text{ cm} - 89 \text{ cm} = 1.16 \text{ m}.$$

(d) $1 \text{ ml} = \frac{1}{1000} \text{ l}$

$$10 \text{ l } 56 \text{ ml} = 10 \text{ l} + 56 \text{ ml} = 10 \text{ l} + \frac{56}{1000} \text{ l} = 10 \text{ l} + 0.056 \text{ l} = 10.056 \text{ l}$$

$$\begin{array}{r} 20.000 \text{ l} \\ - 10.056 \text{ l} \\ \hline 9.944 \text{ l} \end{array}$$

$$\therefore 20 \text{ l} - 10 \text{ l } 56 \text{ ml} = 9.944 \text{ l}$$

(e) $1 \text{ g} = \frac{1}{1000} \text{ kg}$

$$390 \text{ g} = \frac{390}{1000} \text{ kg} = 0.39 \text{ kg}.$$

$$\text{and } 1 \text{ kg } 160 \text{ g} = 1 \text{ kg} + 160 \text{ g} = 1 \text{ kg} + \frac{160}{1000} \text{ kg} = 1 \text{ kg} + 0.160 \text{ kg} = 1.160 \text{ kg}$$

$$\begin{array}{r} 1.160 \text{ kg} \\ - 0.390 \text{ kg} \\ \hline 0.770 \text{ kg} \end{array}$$

$$\therefore 1 \text{ kg } 160 \text{ g} - 390 \text{ g} = 0.770 \text{ kg}.$$

$$(f) \quad 1 \text{ mg} = \frac{1}{1000} \text{ g}$$

$$20 \text{ g } 150 \text{ mg} = 20 \text{ g} + 150 \text{ mg} = 20 \text{ g} + \frac{150}{1000} \text{ g}$$

$$= 20 \text{ g} + 0.150 \text{ g} = 20.150 \text{ g}$$

$$\text{and } 8 \text{ g } 690 \text{ mg} = 8 \text{ g} + 690 \text{ mg} = 8 \text{ g} + \frac{690}{1000} \text{ g}$$

$$= 8 \text{ g} + 0.690 \text{ g} = 8.690 \text{ g}$$

$$\begin{array}{r} 20.150 \text{ g} \\ - 8.690 \text{ g} \\ \hline 11.460 \text{ g} \end{array}$$

$$\therefore 20 \text{ g } 150 \text{ mg} - 8 \text{ g } 690 \text{ mg} = 11.460 \text{ g}.$$

Exercise 17.3

- Length of first roll = 60 m 65 cm = 60.65 m
Length of second roll = 88 m 75 cm = 88.75 m
Length of third roll = 38 m 82 cm = 38.82 m.
The total length of the ribbon

$$= 60.65 \text{ m} + 88.75 \text{ m} + 38.82 \text{ m} = 188.22 \text{ m}$$

So, the total length of the ribbon is 188.22 m.

- Weight of mangoes = 5 kg 200 g = 5.200 kg
Weight of guavas = 4 kg 800 g = 4.800 kg
Weight of watermelon = 5 kg 750 g = 5.750 kg

$$\text{The total weight of the fruits} \\ = 5.200 \text{ kg} + 4.800 \text{ kg} + 5.750 \text{ kg} = 15.750 \text{ kg}.$$

So, the total weight of the fruits is 15.750 kg.

- Length of the rope = 500 m.
Length of one piece = 148.94 m.
Length of other piece

$$= 500 \text{ m} - 148.94 \text{ m} = 351.06 \text{ m}$$

So, the length of other piece is 351.06 m.

- The Quantity of orange juice = 2.5 l
 $= 2.5 \times 1000 \text{ ml} = 2500 \text{ ml}$

$$\text{The Quantity of juice consumed} = 1 \text{ l } 800 \text{ ml} = 1800 \text{ ml}$$

$$\text{The Quantity of juice left} = 2500 \text{ ml} - 1800 \text{ ml} = 700 \text{ ml}$$

So, the quantity of juice left is 700 ml.

- The weight of dry fruits with box = 12.650 kg
 $= 12.650 \times 1000 \text{ g} = 12650 \text{ g}$

$$\text{The weight of dry fruits} = 9 \text{ kg } 800 \text{ g} \\ = 9 \times 1000 \text{ g} + 800 \text{ g} = 9800 \text{ g}$$

$$\therefore \text{The weight of empty box} = 12650 \text{ g} - 9800 \text{ g} = 2850 \text{ g}$$

So, the weight of the empty box is 2850 g.

- The milk used on Monday = 2 l 450 ml = 2.450 l
The milk used on Tuesday = 3 l 140 ml = 3.140 l
The milk used in both days = 2.450 l + 3.140 l = 5.590 l
So, the total milk used in both days is 5.590 l.

$$\begin{array}{r} 60.65 \text{ m} \\ + 88.75 \text{ m} \\ + 38.82 \text{ m} \\ \hline 188.22 \text{ m} \end{array}$$

$$\begin{array}{r} 5.200 \text{ kg} \\ + 4.800 \text{ kg} \\ + 5.750 \text{ kg} \\ \hline 15.750 \text{ kg} \end{array}$$

$$\begin{array}{r} 500.00 \text{ m} \\ - 148.94 \text{ m} \\ \hline 351.06 \text{ m} \end{array}$$

$$\begin{array}{r} 2500 \text{ ml} \\ - 1800 \text{ ml} \\ \hline 700 \text{ ml} \end{array}$$

$$\begin{array}{r} 12650 \text{ g} \\ - 9800 \text{ g} \\ \hline 2850 \text{ g} \end{array}$$

$$\begin{array}{r} 2.450 \text{ l} \\ + 3.140 \text{ l} \\ \hline 5.590 \text{ l} \end{array}$$

Exercise 17.4

1. (a)
$$\begin{array}{r} 8.97 \\ \times 7 \\ \hline 62.79 \end{array}$$

$8.97 \text{ cm} \times 7 = 62.79 \text{ cm.}$

(c)
$$\begin{array}{r} 6.37 \\ \times 11 \\ \hline 637 \\ 637 \times \\ \hline 70.07 \end{array}$$

$6.37 \text{ l} \times 11 = 70.07 \text{ l}$

(e)
$$\begin{array}{r} 1.970 \\ \times 2.25 \\ \hline 9850 \\ 3940 \times \\ 3940 \times \times \\ \hline 4.43250 \end{array}$$

$1.970 \text{ g} \times 2.25 = 4.43250 \text{ g}$

2. (a) $5.967 \text{ g} \div 9 = 0.663$

$$\begin{array}{r} 9 \overline{)5.967} (0.663 \\ \underline{-54} \\ 56 \\ \underline{-54} \\ 27 \\ \underline{-27} \\ 0 \\ \underline{} \times \end{array}$$

(c) $89.64 \text{ l} \div 3 = 29.880 \text{ l}$

$$\begin{array}{r} 3 \overline{)89.640} (29.880 \\ \underline{-6} \\ 29 \\ \underline{-27} \\ 26 \\ \underline{-24} \\ 24 \\ \underline{-24} \\ 0 \\ \underline{-0} \\ 0 \\ \underline{} \times \end{array}$$

(b)
$$\begin{array}{r} 5.061 \\ \times 4 \\ \hline 20.244 \end{array}$$

$5.061 \text{ kg} \times 4 = 20.244 \text{ kg}$

(d)
$$\begin{array}{r} 6.397 \\ \times 2.7 \\ \hline 44779 \\ 12794 \times \\ \hline 17.2719 \end{array}$$

$6.397 \text{ km} \times 2.7 = 17.2719 \text{ km.}$

(f)
$$\begin{array}{r} 11.750 \\ \times 3.5 \\ \hline 58750 \\ 35250 \times \\ \hline 41.1250 \end{array}$$

$11.750 \text{ kl} \times 3.5 = 41.125 \text{ kl}$

(b) $10659 \text{ cl} \div 1.7 = \frac{10659}{1.7} \text{ cl}$
 $= \frac{10659 \times 10}{17} \text{ cl}$
 $= 6270 \text{ cl}$

$$\begin{array}{r} 17 \overline{)106590} (6270 \\ \underline{-102} \\ 45 \\ \underline{-34} \\ 119 \\ \underline{-119} \\ 0 \\ \underline{-0} \\ 0 \\ \underline{} \times \end{array}$$

$$\begin{aligned}
 \text{(d) } 93.285 \text{ m} \div 4.5 &= \frac{93285}{1000} \div \frac{45}{10} \text{ m} \\
 &= \frac{93285}{1000} \times \frac{10}{45} \text{ m} \\
 &= \frac{93285}{4500} \text{ m} \\
 &= 20.73 \text{ m}.
 \end{aligned}$$

$$\begin{array}{r}
 4500 \overline{)93285} (20.73 \\
 \underline{-9000} \\
 32850 \\
 \underline{-31500} \\
 13500 \\
 \underline{-13500} \\
 \times
 \end{array}$$

$$\begin{aligned}
 \text{(e) } 109.20 \text{ kg} \div 0.13 &= \frac{10920}{100} \div \frac{13}{100} \text{ kg} \\
 &= \frac{10920}{100} \times \frac{100}{13} \text{ kg} \\
 &= \frac{10920}{13} \text{ kg} \\
 &= 840 \text{ kg}
 \end{aligned}$$

$$\begin{array}{r}
 13 \overline{)10920} (840 \\
 \underline{-104} \\
 52 \\
 \underline{-52} \\
 0 \\
 \underline{-0} \\
 \times
 \end{array}$$

$$\begin{aligned}
 \text{(f) } 81.621 \text{ m} \div 2.7 &= \frac{81621}{1000} \times \frac{27}{10} \text{ m} \\
 &= \frac{81621}{1000} \times \frac{10}{27} \text{ m} \\
 &= \frac{81621}{100} \times \frac{1}{27} \text{ m} \\
 &= \frac{81621}{100 \times 27} \text{ m} \\
 &= \frac{3023}{100} \text{ m} = 30.23 \text{ m}.
 \end{aligned}$$

$$\begin{array}{r}
 27 \overline{)81621} (3023 \\
 \underline{-81} \\
 62 \\
 \underline{-54} \\
 81 \\
 \underline{-81} \\
 \times
 \end{array}$$

Exercise 17.5

- \therefore Length of cloth required to make 10 shirts = 24 m.
 \therefore Length of cloth required to make 1 shirt = $24 \div 10 = 2.4$ m.
 So, 2.4 m cloth is required to make one shirt.
- \therefore Weight of rice for 5 families = 48 kg 700 g
 \therefore Weight of rice for 1 family = $48 \text{ kg } 700 \text{ g} \div 5$
 $= 48.700 \text{ kg} \div 5$
 $= 48.7 \text{ kg} \div 5$
 $= 9.74 \text{ kg}.$
 So, each family will get 9.740 kg. rice.
- \therefore Quantity of milk supplied to 1 booth = 450.56 l
 \therefore Quantity of milk supplied to 143 booths = $450.56 \text{ l} \times 143 = 64430.08 \text{ l}$

$$\begin{array}{r}
 5 \overline{)48.7} (9.74 \\
 \underline{-45} \\
 37 \\
 \underline{-35} \\
 20 \\
 \underline{-20} \\
 \times
 \end{array}$$

$$\begin{array}{r}
 450.56 \\
 \times 143 \\
 \hline
 135168 \\
 180224 \times \\
 45056 \times \times \\
 \hline
 64430.08
 \end{array}$$

So, 64430.08 l milk has been supplied to all booths.

4. \therefore Distance covered in 1 day = 486.94 km
 \therefore Distance covered in 23 days = 486.94×23
 $= 11199.62$ km.
 So, the car will cover 11199.62 km in 23 days.

$$\begin{array}{r} 486.94 \\ \times 23 \\ \hline 146082 \\ 97388 \times \\ \hline 11199.62 \end{array}$$

5. \therefore Weight of 1 bag = 48 kg 700 g
 $= 48.700$ kg = 48.7 kg
 \therefore Weight of 17 bags = 48.7×17
 $= 827.9$ kg
 So, the weight of 17 bags is 827.9 kg.

$$\begin{array}{r} 48.7 \\ \times 17 \\ \hline 3409 \\ 487 \times \\ \hline 827.9 \end{array}$$

MCQ's

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

Worksheet : Do yourself

18. Time and Temperature

Exercise 18.1

- | | |
|--|---|
| <p>1. 12 hour-clock</p> <p>(a) 7.30 a.m.
 (b) 6.30 a.m.
 (c) 2 p.m.
 (d) 8.30 p.m.</p> <p>2. (a) 1600 hours = 4 p.m.
 (c) 1400 hours = 2 p.m.
 (e) 0100 hours = 1 a.m.</p> | <p>24 hour-clock</p> <p>0730 hours
 0630 hours
 1400 hours
 2030 hours</p> <p>(b) 0700 hours = 7 a.m.
 (d) 0935 hours = 9:35 a.m.
 (f) 1200 hours = 12 noon</p> |
|--|---|

Exercise 18.2

1. (a) 8 minutes
 $1 \text{ min} = 60 \text{ sec}$
 $8 \text{ min} = 8 \times 60 \text{ sec} = 480 \text{ sec}.$
- (b) 1 hour 5 min 4 sec
 $1 \text{ min} = 60 \text{ sec}$
 $1 \text{ hour} = 60 \times 60 \text{ sec} = 3600 \text{ sec}.$
 $1 \text{ hour } 5 \text{ min } 4 \text{ sec} = 1 \text{ hour} + 5 \text{ min} + 4 \text{ sec}$
 $= 3600 \text{ sec} + 5 \times 60 \text{ sec} + 4 \text{ sec}$
 $= 3600 \text{ sec} + 300 \text{ sec} + 4 \text{ sec} = 3904 \text{ sec}.$
- (c) 16 hours
 $1 \text{ hour} = 60 \text{ min}$
 $16 \text{ hours} = 16 \times 60 \text{ min} = 960 \text{ min}.$
- (d) 6 hours 9 minutes
 $1 \text{ hour} = 60 \text{ min}$
 $6 \text{ hours } 9 \text{ minutes} = 6 \times 60 \text{ min} + 9 \text{ min}$
 $= 360 \text{ min} + 9 \text{ min}$
 $= 369 \text{ min}.$

- (e) 3 days
 1 day = 24 hours
 3 days = 3×24 hours = 72 hours.

- (f) 6 days 19 hours
 1 day = 24 hours
 6 days 19 hours = 6×24 hours + 19 hours
 = 144 hours + 19 hours = 163 hours.

2. (a) 720 seconds

$$1 \text{ sec} = \frac{1}{60} \text{ min}$$

$$720 \text{ seconds} = \frac{720}{60} \text{ min}$$

$$= 12 \text{ min.}$$

$$\begin{array}{r} 60 \overline{)720} \text{ (12 min)} \\ \underline{-60} \\ 120 \\ \underline{-120} \\ \\ \times \end{array}$$

- (b) 8766 seconds

$$1 \text{ sec} = \frac{1}{60} \text{ min}$$

$$8766 \text{ seconds} = 8766 \div 60 \text{ min}$$

$$= 146 \text{ min } 6 \text{ sec.}$$

$$\begin{array}{r} 60 \overline{)8766} \text{ (146 min)} \\ \underline{-60} \\ 276 \\ \underline{-240} \\ 366 \\ \underline{-360} \\ \\ \times \end{array}$$

- (c) 480 minutes

$$1 \text{ min} = \frac{1}{60} \text{ hour}$$

$$480 \text{ minutes} = 480 \div 60 \text{ hours}$$

$$= 8 \text{ hours.}$$

$$\begin{array}{r} 60 \overline{)480} \text{ (8 hours)} \\ \underline{-480} \\ \\ \times \end{array}$$

- (d) 684 minutes

$$1 \text{ min} = \frac{1}{60} \text{ hour}$$

$$684 \text{ minutes} = 684 \div 60 \text{ hours}$$

$$= 11 \text{ hours } 24 \text{ min.}$$

$$\begin{array}{r} 60 \overline{)684} \text{ (11 hours)} \\ \underline{-60} \\ 84 \\ \underline{-60} \\ 24 \text{ min} \\ \times \end{array}$$

- (e) 960 hours

$$1 \text{ hour} = \frac{1}{24} \text{ day}$$

$$960 \text{ hours} = 960 \div 24 \text{ days}$$

$$= 40 \text{ days.}$$

$$\begin{array}{r} 24 \overline{)960} \text{ (40 days)} \\ \underline{-96} \\ 0 \\ \underline{-0} \\ \\ \times \end{array}$$

- (f) 560 days

$$1 \text{ day} = \frac{1}{7} \text{ week}$$

$$560 \text{ days} = 560 \div 7 \text{ weeks} = 80 \text{ weeks.}$$

$$\begin{array}{r} 7 \overline{)560} \text{ (80 weeks)} \\ \underline{-56} \\ 0 \\ \underline{-0} \\ \\ \times \end{array}$$

Exercise 18.3

1. (a) 26 minutes 30 sec + 35 minutes 46 sec
 = 61 min 76 sec
 = 61 min + 1 min 16 sec
 = 62 min 16 sec.

$$\begin{array}{r} \text{min} \quad \text{sec} \\ 26 \quad 30 \\ +35 \quad 46 \\ \hline 61 \quad 76 \end{array}$$

- (b) 5 hours 48 minutes + 35 hours 32 minutes
 = 40 hours 80 min
 = 40 hours + 1 hour 20 min
 = 41 hours 20 min.

$$\begin{array}{r} \text{hrs} \quad \text{min} \\ 5 \quad 48 \\ +35 \quad 32 \\ \hline 40 \quad 80 \end{array}$$

$$\begin{aligned}
 \text{(c)} \quad & 17 \text{ hours } 45 \text{ minutes} + 46 \text{ hours } 48 \text{ min} \\
 & = 63 \text{ hours } 93 \text{ min} \\
 & = 63 \text{ hours} + 1 \text{ hour } 33 \text{ min} \\
 & = 64 \text{ hours } 33 \text{ min.}
 \end{aligned}$$

hrs	min
17	45
+46	48
63	93

$$\begin{aligned}
 \text{(d)} \quad & 8 \text{ years } 7 \text{ months} + 2 \text{ years } 11 \text{ months} \\
 & = 10 \text{ years} + 18 \text{ months} \\
 & = 10 \text{ years} + 1 \text{ year } 6 \text{ months} \\
 & = 11 \text{ years } 6 \text{ months.}
 \end{aligned}$$

years	mon
8	7
+2	11
10	18

$$\begin{array}{r}
 \text{(a)} \quad \begin{array}{r} \text{min} \quad \text{sec} \\ 53 \quad 60 + 34 = 94 \\ \cancel{54} \quad \cancel{34} \\ - 45 \quad 48 \\ \hline 8 \quad 46 \end{array}
 \end{array}$$

$$\begin{aligned}
 & 54 \text{ min } 34 \text{ sec} - 45 \text{ min } 48 \text{ sec} \\
 & = 8 \text{ min } 46 \text{ sec.}
 \end{aligned}$$

$$\begin{array}{r}
 \text{(b)} \quad \begin{array}{r} \text{hrs} \quad \text{min} \\ 48 \quad 54 \\ - 30 \quad 34 \\ \hline 18 \quad 20 \end{array}
 \end{array}$$

$$\begin{aligned}
 & 48 \text{ hours } 54 \text{ minutes} \\
 & \quad - 30 \text{ hours } 34 \text{ minutes} \\
 & = 18 \text{ hours } 20 \text{ min.}
 \end{aligned}$$

$$\begin{array}{r}
 \text{(c)} \quad \begin{array}{r} \text{min} \quad \text{sec} \\ 48 \quad 38 \\ - 12 \quad 36 \\ \hline 36 \quad 2 \end{array}
 \end{array}$$

$$\begin{aligned}
 & 48 \text{ minutes } 38 \text{ seconds} \\
 & \quad - 12 \text{ minutes } 2 \text{ seconds} \\
 & = 36 \text{ min } 2 \text{ sec.}
 \end{aligned}$$

$$\begin{array}{r}
 \text{(d)} \quad \begin{array}{r} \text{years} \quad \text{mon} \\ 18 \quad 12 + 1 = 13 \\ \cancel{19} \quad \cancel{1} \\ - 16 \quad 8 \\ \hline 2 \quad 5 \end{array}
 \end{array}$$

$$\begin{aligned}
 & 19 \text{ years } 1 \text{ month} - 16 \text{ years } 8 \text{ months} \\
 & = 2 \text{ years } 5 \text{ months.}
 \end{aligned}$$

$$\begin{aligned}
 \text{3. (a)} \quad & 2 : 05 \text{ p.m.} = 14 \text{ } 05 \text{ hours} \\
 & 10 : 00 \text{ p.m.} = 22 \text{ } 00 \text{ hours}
 \end{aligned}$$

$$\begin{array}{r}
 \begin{array}{r} \text{hrs} \quad \text{min} \\ 21 \quad 60 \\ \cancel{22} \quad \cancel{00} \\ - 14 \quad 05 \\ \hline 7 \quad 55 \end{array}
 \end{array}$$

\therefore The time = 7 hours 55 min.

$$\begin{aligned}
 \text{(b)} \quad & \text{Duration from } 10:34 \text{ p.m. to midnight} \\
 & 10:34 \text{ p.m.} = 2234 \text{ hours}
 \end{aligned}$$

$$\begin{array}{r}
 \begin{array}{r} \text{hrs} \quad \text{min} \\ 23 \quad 60 \\ \cancel{24} \quad \cancel{00} \\ - 22 \quad 34 \\ \hline 1 \quad 26 \end{array}
 \end{array}$$

\therefore 1st duration = 1 hour 26 min.

Now Duration from midnight to 6:47 a.m.

$$6 : 47 \text{ a.m.} = 0647 \text{ hours.}$$

$$\begin{array}{r}
 \begin{array}{r} \text{hrs} \quad \text{min} \\ 06 \quad 47 \\ - 00 \quad 00 \\ \hline 6 \quad 47 \end{array}
 \end{array}$$

IInd Duration = 6 hours 47 min.

Total duration = 1 hour 26 min + 6 hours 47 min.
= 7 hours 73 min = 8 hours 13 min.

(c) 8:55 a.m. = 08 55 hours

2:35 p.m. = 14 35 hours

Duration from 8:55 a.m. to noon

hrs	min
11	00 + 60 = 60
12	00
– 8	55
<hr/>	
3	5

Ist duration = 3 hours 5 min.

Duration from noon to 2:35 p.m.

hrs	min
14	35
– 12	00
<hr/>	
2	35

IInd duration = 2 hours 35 min.

Total duration = 3 hours 5 min + 2 hours 35 min = 5 hours 40 min.

(d) 7:35 p.m. = 1935 hours

10:30 a.m. = 10 30 hours

Duration from 7:35 p.m. to midnight

hrs	min
23	00 + 60 = 60
24	00
– 8	35
<hr/>	
4	25

Ist duration = 6 hours 25 minutes

Duration from midnight to 10:30 a.m.

hrs	min
10	30
– 00	00
<hr/>	
10	30

IInd duration = 10 hours 30 minutes

Total duration = 4 hours 25 minutes + 10 hours 30 minutes
= 14 hours 55 minutes.

4. (a) No. of days from 17 January to 31 January = $31 - 17 + 1 = 31 - 16 = 15$ days

No. of days in February = 29 days

No. of days from 1 March to 30 March = 30 days

Total no. of days = $15 + 29 + 30 = 74$ days.

(b) No. of days from 27 June to 30 June = $30 - 27 + 1 = 30 - 26 = 4$ days

No. of days from 1 July to 29 July = 29 days

Total no. of days = $4 + 29 = 33$ days.

(c) No. of days from 13 November to 30 November = $30 - 13 + 1 = 30 - 12 = 18$ days

No. of days from 1 Dec. to 15 Dec. = 15 days

Total no. of days = $18 + 15 = 33$ days.

- (d) No. of days from 10 Oct. to 31 Oct. = $31 - 10 + 1 = 21 + 1 = 22$ days
 No. of days in November = 30 days
 No. of days from 1 Dec. to 15 Dec. = 15 days
 Total no. of days = $22 + 30 + 15 = 67$ days.

5. Joining Date = 15 Aug. 2005
 Last Date = 30 November 2005
 No. of days from 15 Aug. to 31 Aug = $31 - 15 + 1 = 31 - 4 = 17$ days
 No. of days in Sept. = 30 days
 No. of days in Oct. = 31 days
 No. of days from 1 Nove. to 30 Nov. = 30 days
 Total no. of days = $17 + 30 + 31 + 30 = 108$ days
 So, the duration of the course is 108 days.
6. 6:25 a.m. = 06 25 hours
 7:35 a.m. = 07 35 hours

hrs	min
7	35
- 6	25
1	10

\therefore Time duration = 1 hour 10 minutes
 So, the duration of time of his physical exercise is 1 hour to 10 minutes.

Exercise 18.4

1. (a) 0430 hours.
 (b) Total distance from Delhi to Haridwar = $0 + 10 + 15 + 15 + 35 + 30 + 30 + 40 + 35 = 210$ km.
 (c) Time taken = $0628 - 0430 = 1$ hour 58 minutes.
 (d) Time taken = $1030 - 0720 = 3$ hours 10 minutes.

hrs	min
5	$60 + 28 = 88$
06	28
- 04	30
1	58

hrs	min
10	30
- 7	20
3	10

- (e) Total time taken = $1030 - 0430 = 6$ hours.

hrs	min
10	30
- 04	30
6	00

Exercise 18.5

1. (a) 37°C
 $^\circ\text{F} = \frac{9}{5}^\circ\text{C} + 32 = \frac{9}{5} \times 37 + 32$
 $= \frac{333}{5} + 32 = \frac{333 + 32 \times 5}{5}$
 $= \frac{333 + 160}{5} = \frac{493}{5} = 98.6^\circ\text{F}$
 $\therefore 37^\circ\text{C} = 98.6^\circ\text{F}$

(b) 81°C

$$^{\circ}\text{F} = \frac{9}{5}^{\circ}\text{C} + 32 = \frac{9}{5} \times 81 + 32$$

$$^{\circ}\text{F} = \frac{729}{5} + 32 = \frac{729 + 32 \times 5}{5} = \frac{729 + 160}{5} = \frac{889}{5} = 177.8^{\circ}\text{F}$$

$\therefore 81^{\circ}\text{C} = 177.8^{\circ}\text{F}$

(c) 75°C

$$^{\circ}\text{F} = \frac{9}{5}^{\circ}\text{C} + 32 = \frac{9}{5} \times \frac{15}{1} + 32 = 135 + 32 = 167^{\circ}\text{F}$$

$\therefore 75^{\circ}\text{C} = 167^{\circ}\text{F}$

(d) 130°C

$$^{\circ}\text{F} = \frac{9}{5}^{\circ}\text{C} + 32 = \frac{9}{5} \times \frac{26}{1} + 32 = 234 + 32 = 266^{\circ}\text{F}$$

$\therefore 130^{\circ}\text{C} = 266^{\circ}\text{F}$

(e) 95°C

$$^{\circ}\text{F} = \frac{9}{5}^{\circ}\text{C} + 32 = \frac{9}{5} \times \frac{19}{1} + 32 = 171 + 32 = 203^{\circ}\text{F}$$

$\therefore 95^{\circ}\text{C} = 203^{\circ}\text{F}$

(f) 100°C

$$^{\circ}\text{F} = \frac{9}{5}^{\circ}\text{C} + 32 = \frac{9}{5} \times 100 + 32 = 9 \times 20 + 32 = 180 + 32 = 212^{\circ}\text{F}$$

$\therefore 100^{\circ}\text{C} = 212^{\circ}\text{F}$

2. (a) 113°F

$$^{\circ}\text{C} = \frac{5}{9} (^{\circ}\text{F} - 32) = \frac{5}{9} (113 - 32) = \frac{5}{9} \times 81 = 5 \times 9 = 45^{\circ}\text{C}$$

$\therefore 113^{\circ}\text{F} = 45^{\circ}\text{C}$

(b) 167°F

$$^{\circ}\text{C} = \frac{5}{9} (^{\circ}\text{F} - 32) = \frac{5}{9} (167 - 32) = \frac{5}{9} \times 135 = 5 \times 15 = 75^{\circ}\text{C}$$

$\therefore 167^{\circ}\text{F} = 75^{\circ}\text{C}$

(c) 140°F

$$^{\circ}\text{C} = \frac{5}{9} (^{\circ}\text{F} - 32) = \frac{5}{9} (140 - 32) = \frac{5}{9} \times 108 = 5 \times 12 = 60^{\circ}\text{C}$$

$\therefore 140^{\circ}\text{F} = 60^{\circ}\text{C}$

(d) 104°F

$$^{\circ}\text{C} = \frac{5}{9} (^{\circ}\text{F} - 32) = \frac{5}{9} (104 - 32) = \frac{5}{9} \times 72 = 5 \times 8 = 40^{\circ}\text{C}$$

$\therefore 104^{\circ}\text{F} = 40^{\circ}\text{C}$

(e) 221°F

$$^{\circ}\text{C} = \frac{5}{9} (^{\circ}\text{F} - 32) = \frac{5}{9} (221 - 32) = \frac{5}{9} \times 189 = 5 \times 21 = 105^{\circ}\text{C}$$

$\therefore 221^{\circ}\text{F} = 105^{\circ}\text{C}$

(f) 98.6°F
 $^{\circ}\text{C} = \frac{5}{9} (^{\circ}\text{F} - 32) = \frac{5}{9} (98.6 - 32) = \frac{5}{9} \times 66.6 = 5 + 7.4 = 37.0 = 37^{\circ}\text{C}$

$\therefore 98.6^{\circ}\text{F} = 37^{\circ}\text{C}$

3. (a) A person who has fever will have a body temperature more than **98.6°F** .
 (b) A doctor uses a **clinical** thermometer to measure temperature.
 (c) If the temperature on Monday was 41°C and it increased by 1.3°C on Tuesday, then the temperature was **42.3°C** on Tuesday.
 (d) **32°F** is also known as freezing point of water.
 (e) The water in the kettle was boiling its temperature was **212°F** .

MCQ's

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

Worksheet : Do yourself

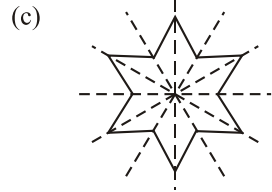
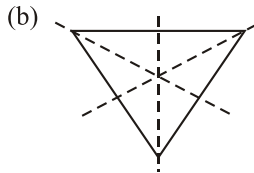
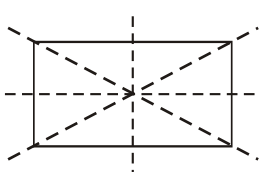
Formative Assessment-3

1. (c) 2. (a) 3. (a) 4. (a) 5. (c) 6. (a) 35 (b) loss (c) 1.876 kg (d) 72 km/h (e) ₹ 325, 45
 7. (a) False (b) True (c) True (d) True (e) False.

19. Lines and Angles

Exercise 19.1

1. (a) No. (b) Yes (c) No
 2. (a)



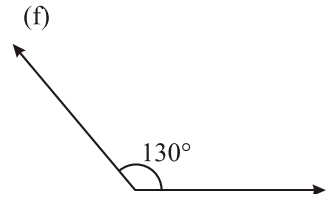
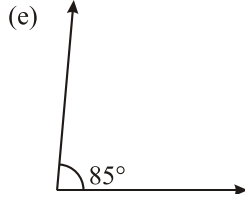
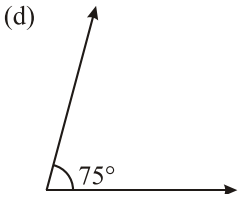
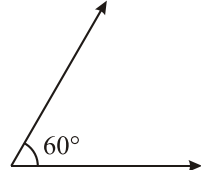
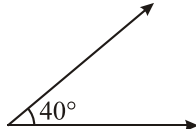
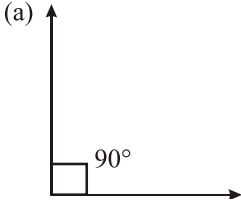
Exercise 19.2

1. (a) line (b) ray (c) no
 (d) intersecting (e) parallel.
 2. (a) Ray \overrightarrow{PQ} (b) X Point (c) Line \overline{MN} (d) Line segment \overline{CD}
 3. (a) $\overline{MN}, \overline{NO}, \overline{OP}$ and \overline{PM} are line segments.
 (b) $\overline{PQ}, \overline{QR}$ and \overline{RP} are line segments.
 (c) $\overline{AB}, \overline{BC}, \overline{CD}, \overline{DE}, \overline{EF}, \overline{FG}, \overline{GH}$ and \overline{HA} are line segments.
 4. (a) parallel lines (b) perpendicular lines
 (c) Intersecting lines

Exercise 19.3

1. (a) Name of the angle is $\angle MON$
 Vertex is O.
 Arms are ON and OM
 (b) Name of the angle is $\angle XYZ$
 Vertex is Y.
 Arms are YX and YZ
 (c) Name of the angle is $\angle PQR$
 Vertex is Q.
 Arms are QP and QR

2. (a) 38° (b) 15° (c) 90°
 (d) 30° (e) 70 (f) 120
3. (a) (b) (c)



4. (a) X, J, K, Y are the points in the exterior of $\angle ABC$.
 (b) P, Q, L are the points in the interior of $\angle ABC$.
 (c) I, M, D, N are the points on $\angle ABC$.

Exercise 19.4

1. (a) Obtuse angle (b) Right angle
 (c) Acute angle (d) Straight angle
 (e) Acute angle (f) Complete angle
2. (a) 117° Obtuse angle (b) 28° Acute angle
 (c) 150° Obtuse angle (d) 270° Reflex angle
 (e) 0° Zero angle (f) 49° Acute angle
 (g) 90.5° Obtuse angle (h) 285° Reflex angle
3. (a) False (b) True (c) False (d) True

MCQ's

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

Worksheet

