



# Fractions

## Exercise 4.1

1. Write four fractions equivalent to each of the following :

Ans. a.  $\frac{6}{16}, \frac{9}{24}, \frac{12}{32}, \frac{15}{40}$       b.  $\frac{14}{20}, \frac{21}{30}, \frac{28}{40}, \frac{35}{50}$       c.  $\frac{4}{10}, \frac{6}{15}, \frac{8}{20}, \frac{10}{25}$   
 d.  $\frac{12}{26}, \frac{18}{39}, \frac{24}{52}, \frac{30}{65}$       e.  $\frac{10}{24}, \frac{15}{36}, \frac{20}{48}, \frac{25}{60}$       f.  $\frac{12}{26}, \frac{18}{39}, \frac{24}{52}, \frac{30}{65}$

2. Fill in the boxes :

Ans. a.  $\frac{1}{5} = \frac{\boxed{3}}{20}$       b.  $\frac{3}{4} = \frac{\boxed{18}}{24}$       c.  $\frac{2}{3} = \frac{\boxed{16}}{24}$       d.  $\frac{\boxed{2}}{14} = \frac{1}{7}$   
 e.  $\frac{4}{8} = \frac{\boxed{1}}{2}$       f.  $\frac{\boxed{6}}{7} = \frac{24}{28}$       g.  $\frac{5}{8} = \frac{15}{\boxed{24}}$       h.  $\frac{18}{54} = \frac{9}{\boxed{27}}$   
 i.  $\frac{11}{13} = \frac{33}{\boxed{39}}$       j.  $\frac{10}{13} = \frac{5}{\boxed{12}}$       k.  $\frac{20}{31} = \frac{\boxed{24}}{93}$       l.  $\frac{\boxed{35}}{40} = \frac{7}{8}$

3. Reduce the following fractions to their lowest forms :

Ans. a.  $\frac{8}{30}$       
$$\begin{array}{r} 8 \overline{)30} \overline{3} \\ -24 \\ \hline 6 \overline{)8} \overline{1} \\ -6 \\ \hline 2 \overline{)6} \overline{3} \\ -6 \\ \hline 0 \end{array}$$
  
 $\therefore$  H.C.F. of 8 and 30 is 2.  
 Now,  $\frac{8 \div 2}{30 \div 2} = \frac{4}{15}$   
 So,  $\frac{4}{15}$  is the lowest form of  $\frac{8}{30}$ .  
 b.  $\frac{27}{45}$       
$$\begin{array}{r} 27 \overline{)45} \overline{1} \\ -27 \\ \hline 18 \overline{)27} \overline{1} \\ -18 \\ \hline 9 \overline{)18} \overline{2} \\ -18 \\ \hline 0 \end{array}$$
  
 The H.C.F. of 27 and 45 is 9.  
 Now,  $\frac{27 \div 9}{45 \div 9} = \frac{3}{5}$   
 So,  $\frac{3}{5}$  is the lowest form of  $\frac{27}{45}$ .  
 c.  $\frac{68}{136}$       
$$\begin{array}{r} 68 \overline{)136} \overline{2} \\ -136 \\ \hline 0 \end{array}$$
  
 The H.C.F. of 68 and 136 is 68.  
 Now,  $\frac{68 \div 68}{136 \div 68} = \frac{1}{2}$   
 So,  $\frac{1}{2}$  is the lowest form of  $\frac{68}{136}$ .

d.  $\frac{102}{119}$

The H.C.F. of 102 and 119 is 17.

Now,  $\frac{102 \div 17}{119 \div 17} = \frac{6}{7}$

So,  $\frac{6}{7}$  is the lowest form of  $\frac{102}{119}$ .

$$\begin{array}{r} 102 \overline{)119} \text{ (1} \\ - 102 \\ \hline 17 \overline{)102} \text{ (6} \\ - 102 \\ \hline 0 \end{array}$$

e.  $\frac{153}{204}$

The H.C.F. of 153 and 204 is 51.

Now,  $\frac{153 \div 51}{204 \div 51} = \frac{3}{4}$

So,  $\frac{3}{4}$  is the lowest form of  $\frac{153}{204}$ .

$$\begin{array}{r} 153 \overline{)204} \text{ (1} \\ - 153 \\ \hline 51 \overline{)153} \text{ (3} \\ - 153 \\ \hline 0 \end{array}$$

f.  $\frac{13}{65}$

The H.C.F. of 13 and 65 is 13.

Now,  $\frac{13 \div 13}{65 \div 13} = \frac{1}{5}$

So,  $\frac{1}{5}$  is the lowest form of  $\frac{13}{65}$ .

$$\begin{array}{r} 13 \overline{)65} \text{ (1} \\ - 13 \\ \hline 9 \end{array}$$

g.  $\frac{49}{63}$

The H.C.F. of 49 and 63 is 7.

Now,  $\frac{49 \div 7}{63 \div 7} = \frac{7}{9}$

So,  $\frac{7}{9}$  is the lowest form of  $\frac{49}{63}$ .

$$\begin{array}{r} 49 \overline{)63} \text{ (1} \\ - 49 \\ \hline 14 \overline{)49} \text{ (3} \\ - 42 \\ \hline 7 \overline{)14} \text{ (2} \\ - 14 \\ \hline 0 \end{array}$$

h.  $\frac{129}{243}$

The H.C.F. of 129 and 243 is 3.

Now,  $\frac{129 \div 3}{243 \div 3} = \frac{43}{81}$

So,  $\frac{43}{81}$  is the lowest form of  $\frac{129}{243}$ .

$$\begin{array}{r} 129 \overline{)243} \text{ (1} \\ - 129 \\ \hline 114 \overline{)129} \text{ (1} \\ - 114 \\ \hline 15 \overline{)114} \text{ (7} \\ - 105 \\ \hline 9 \overline{)15} \text{ (1} \\ - 9 \\ \hline 6 \overline{)9} \text{ (1} \\ - 6 \\ \hline 3 \overline{)6} \text{ (2} \\ - 6 \\ \hline 0 \end{array}$$

i.  $\frac{96}{156}$   
 The H.C.F. of 96 and 156 is 12.  
 Now,  
 $\frac{96 \div 12}{156 \div 12} = \frac{8}{13}$   
 So,  $\frac{8}{13}$  is the lowest form of  $\frac{96}{156}$ .

$$\begin{array}{r} 96 \overline{)156} \text{ (1)} \\ \underline{-96} \phantom{0} \\ 60 \overline{)96} \text{ (1)} \\ \underline{-60} \phantom{0} \\ 36 \overline{)60} \text{ (1)} \\ \underline{-36} \phantom{0} \\ 24 \overline{)36} \text{ (1)} \\ \underline{-24} \phantom{0} \\ 12 \overline{)24} \text{ (2)} \\ \underline{-24} \\ 0 \end{array}$$

(j)  $\frac{154}{238}$   
 The H.C.F. of 154 and 238 is 14.  
 Now,  
 $\frac{154 \div 14}{238 \div 14} = \frac{11}{17}$   
 So,  $\frac{11}{17}$  is the lowest form of  $\frac{154}{238}$ .

$$\begin{array}{r} 154 \overline{)238} \text{ (1)} \\ \underline{-154} \phantom{0} \\ 84 \overline{)154} \text{ (1)} \\ \underline{-84} \phantom{0} \\ 70 \overline{)84} \text{ (1)} \\ \underline{-70} \phantom{0} \\ 14 \overline{)70} \text{ (5)} \\ \underline{-70} \\ 0 \end{array}$$

### Exercise 4.2

#### 1. Convert the following mixed fractions into improper fractions :

Ans. a.  $9\frac{2}{7} = \frac{9 \times 7 + 2}{7} = \frac{63 + 2}{7} = \frac{65}{7}$   
 b.  $11\frac{3}{8} = \frac{11 \times 8 + 3}{8} = \frac{88 + 3}{8} = \frac{91}{8}$   
 c.  $15\frac{5}{16} = \frac{15 \times 16 + 5}{16} = \frac{240 + 5}{16} = \frac{245}{16}$   
 d.  $23\frac{7}{11} = \frac{23 \times 11 + 7}{11} = \frac{253 + 7}{11} = \frac{260}{11}$   
 e.  $39\frac{13}{19} = \frac{39 \times 19 + 13}{19} = \frac{741 + 13}{19} = \frac{754}{19}$   
 f.  $5\frac{10}{13} = \frac{5 \times 13 + 10}{13} = \frac{65 + 10}{13} = \frac{75}{13}$

#### 2. Convert the following improper fractions into mixed fractions :

Ans. a.  $\frac{100}{9} = 11\frac{1}{9}$   
 So,  $11\frac{1}{9}$  is the mixed fraction of  $\frac{100}{9}$ .  
 b.  $\frac{130}{11} = 11\frac{9}{11}$   
 So,  $11\frac{9}{11}$  is the mixed fraction of  $\frac{130}{11}$ .

$$\begin{array}{r} 9 \overline{)100} \text{ (2)} \\ \underline{-9} \phantom{0} \\ 10 \\ \underline{-9} \\ 1 \end{array}$$

$$\begin{array}{r} 11 \overline{)130} \text{ (11)} \\ \underline{-11} \phantom{0} \\ 20 \\ \underline{-11} \\ 9 \end{array}$$

- c.  $\frac{90}{17} = 5\frac{5}{17}$   
 So,  $5\frac{5}{17}$  is the mixed fraction of  $\frac{90}{17}$
- d.  $\frac{254}{19} = 13\frac{7}{19}$   
 So,  $13\frac{7}{19}$  is the mixed fraction of  $\frac{254}{19}$ .
- e.  $\frac{380}{25} = 15\frac{5}{25}$   
 So,  $15\frac{5}{25}$  is the mixed fraction of  $\frac{380}{25}$ .
- f.  $\frac{45}{13} = 3\frac{6}{13}$   
 So,  $3\frac{6}{13}$  is the mixed fraction of  $\frac{45}{13}$ .

$$\begin{array}{r} 17 \overline{)90} \text{ (5)} \\ -85 \\ \hline 5 \end{array}$$

$$\begin{array}{r} 19 \overline{)254} \text{ (13)} \\ -19 \\ \hline 64 \\ -57 \\ \hline 7 \end{array}$$

$$\begin{array}{r} 25 \overline{)380} \text{ (15)} \\ -25 \\ \hline 130 \\ -125 \\ \hline 5 \end{array}$$

$$\begin{array}{r} 13 \overline{)45} \text{ (3)} \\ -39 \\ \hline 6 \end{array}$$

**3. Convert the following unlike fractions into like fractions :**

**Ans.** a. Here,  $\frac{3}{8} = \frac{3 \times 4}{8 \times 4} = \frac{12}{32}$

L.C.M. of 8 and 32 is 32.

So,  $\frac{1}{32}$  and  $\frac{12}{32}$  are like fractions.

c.  $\frac{8}{12} = \frac{8 \times 5}{12 \times 5} = \frac{40}{60}$

L.C.M. of 5 and 12 is 60.

and,  $\frac{7}{5} = \frac{7 \times 12}{5 \times 12} = \frac{84}{60}$

So,  $\frac{40}{60}$  and  $\frac{84}{60}$  are the like fractions.

e.  $\frac{5}{24} = \frac{5 \times 5}{24 \times 5} = \frac{25}{120}$

and,  $\frac{3}{60} = \frac{3 \times 2}{60 \times 2} = \frac{6}{120}$

b.  $\frac{9}{15} = \frac{9 \times 6}{15 \times 6} = \frac{54}{90}$

and,  $\frac{6}{18} = \frac{6 \times 5}{18 \times 5} = \frac{30}{90}$

L.C.M. of 15 and 18 is 90.

So,  $\frac{54}{90}$  and  $\frac{30}{90}$  are like fraction.

d.  $\frac{1}{10} = \frac{1 \times 3}{10 \times 3} = \frac{3}{30}$

and,  $\frac{3}{15} = \frac{3 \times 2}{15 \times 2} = \frac{6}{30}$

L.C.M. of 10 and 15 is 30.

So,  $\frac{3}{30}$  and  $\frac{6}{30}$  are the like fractions.

L.C.M. of 24 and 60 is 120.

So,  $\frac{25}{120}$  and  $\frac{6}{120}$  are like fractions.

f.  $\frac{13}{48} = \frac{13 \times 1}{48 \times 1} = \frac{13}{48}$

and,  $\frac{3}{12} = \frac{3 \times 4}{12 \times 4} = \frac{12}{48}$

L.C.M. of 48 and 12 is 48.

So,  $\frac{13}{48}$  and  $\frac{12}{48}$  are like fractions.

### Exercise 4.3

1. Fill in the blanks using '>' or '<' to make correct statements :

Ans. a.  $\frac{3}{5} > \frac{3}{8}$       b.  $\frac{5}{14} < \frac{5}{8}$       c.  $\frac{11}{16} < \frac{11}{12}$   
d.  $\frac{14}{17} < \frac{14}{15}$       e.  $\frac{15}{19} > \frac{15}{23}$       f.  $\frac{3}{5} < \frac{4}{5}$   
g.  $\frac{6}{11} > \frac{5}{11}$       h.  $\frac{13}{16} > \frac{11}{16}$       i.  $\frac{23}{25} < \frac{24}{25}$

2. Encircle the greater fraction in each of the following :

Ans. a.  $\frac{5}{18}, \left(\frac{5}{9}\right)$       b.  $\frac{15}{18}, \left(\frac{15}{16}\right)$       c.  $\left(\frac{6}{8}\right), \frac{6}{12}$       d.  $\frac{1}{12}, \left(\frac{2}{12}\right)$   
e.  $\frac{3}{36}, \left(\frac{4}{36}\right)$       e.  $\frac{3}{6}, \left(\frac{7}{3}\right)$       g.  $\frac{11}{18}, \left(\frac{15}{14}\right)$       h.  $\left(\frac{7}{11}\right), \frac{3}{14}$

3. Encircle the greater fractions :

Ans. a.  $\left(3\frac{4}{12}\right), \frac{13}{9}$       b.  $\left(2\frac{6}{15}\right), \frac{18}{10}$       c.  $\left(4\frac{1}{7}\right), \frac{13}{8}$       d.  $1\frac{1}{6}, \left(\frac{15}{9}\right)$   
e.  $\left(5\frac{3}{8}\right), \frac{13}{6}$       f.  $\left(5\frac{2}{6}\right), \frac{21}{7}$       g.  $\left(3\frac{2}{10}\right), \frac{11}{15}$       h.  $\left(5\frac{2}{4}\right), \frac{16}{7}$

4. Encircle the greater fractions :

Ans. a.  $\left(\frac{14}{18}\right), \frac{12}{25}$       b.  $\frac{4}{16}, \left(\frac{6}{7}\right)$       c.  $\frac{12}{35}, \left(\frac{18}{36}\right)$       d.  $\frac{19}{48}, \left(\frac{16}{36}\right)$   
e.  $\frac{11}{15}, \left(\frac{8}{9}\right)$       f.  $\left(\frac{12}{16}\right), \frac{14}{23}$       g.  $\frac{3}{18}, \left(\frac{5}{11}\right)$       h.  $\frac{5}{12}, \left(\frac{16}{15}\right)$

5. Arrange the following fractions in ascending order :

Ans. a.  $\frac{3}{6}, \frac{1}{3}, \frac{17}{30}, \frac{4}{15}$

L.C.M. of 6, 3, 30 and 15 is 30.

$$\frac{3}{6} = \frac{3 \times 5}{6 \times 5} = \frac{15}{30}$$

$$\frac{1}{3} = \frac{1 \times 10}{3 \times 10} = \frac{10}{30}$$

$$\frac{17}{30} = \frac{17 \times 1}{30 \times 1} = \frac{17}{30}$$

$$\frac{4}{15} = \frac{4 \times 2}{15 \times 2} = \frac{8}{30}$$

Hence, the required ascending order is :

$$\frac{4}{15} < \frac{1}{3} < \frac{3}{6}, \frac{17}{30}$$

b.  $\frac{5}{6}, \frac{7}{8}, \frac{3}{4}, \frac{4}{9}, \frac{1}{3}$

L.C.M. of 6, 8, 4, 9 and 3 is 72.

$$\frac{5}{6} = \frac{5 \times 12}{6 \times 12} = \frac{60}{72}$$

$$\frac{7}{8} = \frac{7 \times 9}{8 \times 9} = \frac{63}{72}$$

$$\frac{3}{4} = \frac{3 \times 18}{4 \times 18} = \frac{54}{72}$$

$$\frac{4}{9} = \frac{4 \times 8}{9 \times 8} = \frac{32}{72}$$

$$\frac{1}{3} = \frac{1 \times 24}{3 \times 24} = \frac{24}{72}$$

2	6, 8, 4, 9, 3
2	3, 4, 2, 9, 3
2	3, 2, 1, 9, 3
3	3, 1, 1, 9, 3
3	1, 1, 1, 3, 1
	1, 1, 1, 1, 1

Hence, the required ascending order is :

$$\frac{1}{3} < \frac{4}{9}, \frac{3}{4} < \frac{5}{6} < \frac{7}{8}$$

c.  $\frac{3}{8}, \frac{1}{4}, \frac{5}{16}, \frac{3}{6}, \frac{10}{15}$

L.C.M. of 8, 4, 16, 6 and 15 is 240.

$$\frac{3}{8} = \frac{3 \times 30}{8 \times 30} = \frac{90}{240}$$

$$\frac{1}{4} = \frac{1 \times 60}{4 \times 60} = \frac{60}{240}$$

$$\frac{5}{16} = \frac{5 \times 15}{16 \times 15} = \frac{75}{240}$$

$$\frac{3}{6} = \frac{3 \times 40}{6 \times 40} = \frac{120}{240}$$

2	8, 4, 16, 6, 15
2	4, 2, 8, 3, 15
2	2, 1, 4, 3, 15
2	1, 1, 2, 3, 15
3	1, 1, 1, 3, 15
5	1, 1, 1, 1, 5
	1, 1, 1, 1, 1

$$\frac{10}{5} = \frac{10 \times 16}{15 \times 16} = \frac{160}{240}$$

Hence, the required ascending order is :

$$\frac{1}{4} < \frac{5}{16} < \frac{3}{8} < \frac{3}{6} < \frac{10}{15}$$

(d)  $\frac{2}{9}, \frac{4}{3}, \frac{6}{8}, \frac{5}{7}, \frac{2}{5}$

L.C.M. of 9, 3, 8, 7 and 5 is 2520.

$$\frac{2}{9} = \frac{2 \times 280}{9 \times 280} = \frac{560}{2520}$$

$$\frac{4}{3} = \frac{4 \times 840}{3 \times 840} = \frac{3360}{2520}$$

$$\frac{6}{8} = \frac{6 \times 315}{8 \times 315} = \frac{1890}{2520}$$

$$\frac{5}{7} = \frac{5 \times 360}{7 \times 360} = \frac{1800}{2520}$$

$$\frac{2}{5} = \frac{2 \times 504}{5 \times 504} = \frac{1008}{2520}$$

2	9, 3, 8, 7, 5
2	9, 3, 4, 7, 5
2	9, 3, 2, 7, 5
3	9, 3, 1, 7, 5
3	3, 1, 1, 7, 5
	1, 1, 1, 7, 5

Hence, the required ascending order is  $\frac{2}{9} < \frac{3}{5} < \frac{5}{7} < \frac{6}{8} < \frac{4}{3}$

e.  $\frac{7}{12}, \frac{3}{6}, \frac{3}{4}, \frac{1}{3}, \frac{2}{5}$

Now,  $\frac{7}{12} = \frac{7 \times 5}{12 \times 5} = \frac{35}{60}$

$$\frac{3}{6} = \frac{3 \times 10}{6 \times 10} = \frac{30}{60}$$

L.C.M. of 12, 6, 4, 3, 5 is 60.

$$\frac{3}{4} = \frac{3 \times 15}{4 \times 15} = \frac{45}{60}$$

$$\frac{1}{3} = \frac{1 \times 20}{3 \times 20} = \frac{20}{60}$$

$$\frac{2}{5} = \frac{2 \times 12}{5 \times 12} = \frac{24}{60}$$

Hence, the required ascending order is  $\frac{1}{3} < \frac{2}{5} < \frac{3}{6} < \frac{7}{12} < \frac{4}{3}$

f.  $\frac{3}{8}, \frac{5}{12}, \frac{17}{24}, \frac{9}{18}, \frac{23}{24}$

Now,  $\frac{3}{8} = \frac{3 \times 9}{8 \times 9} = \frac{27}{72}$

$$\frac{5}{12} = \frac{5 \times 6}{12 \times 6} = \frac{30}{72}$$

$$\frac{17}{24} = \frac{17 \times 3}{24 \times 3} = \frac{51}{72}$$

L.C.M. of 8, 12, 24, 18 and 24 is 72.

$$\frac{9}{18} = \frac{9 \times 4}{18 \times 4} = \frac{36}{72}$$

$$\frac{23}{24} = \frac{23 \times 3}{24 \times 3} = \frac{69}{72}$$

Hence, the required ascending order is

$$\frac{3}{8} < \frac{5}{12} < \frac{9}{18} < \frac{17}{24} < \frac{23}{24}$$

g.  $\frac{5}{6}, \frac{3}{8}, \frac{2}{3}, \frac{1}{2}$

L.C.M. of 6, 8, 3 and 2 is 24.

Now,  $\frac{5}{6} = \frac{5 \times 4}{6 \times 4} = \frac{20}{24}$

$$\frac{3}{8} = \frac{3 \times 3}{8 \times 3} = \frac{9}{24}$$

$$\frac{2}{3} = \frac{2 \times 8}{3 \times 8} = \frac{16}{24}$$

$$\frac{1}{2} = \frac{1 \times 12}{2 \times 12} = \frac{12}{24}$$

Hence, the required ascending order is :

$$\frac{3}{8} < \frac{1}{2} < \frac{2}{3} < \frac{5}{6}$$

h.  $\frac{1}{8}, \frac{3}{4}, \frac{2}{6}, \frac{5}{12}, \frac{10}{22}$

L.C.M. of 8, 4, 6, 12 and 22 is 264.

Now,  $\frac{1}{8} = \frac{1 \times 33}{8 \times 33} = \frac{33}{264}$

$$\frac{3}{4} = \frac{3 \times 66}{4 \times 66} = \frac{198}{264}$$

$$\frac{2}{6} = \frac{2 \times 44}{6 \times 44} = \frac{88}{264}$$

$$\frac{5}{12} = \frac{5 \times 22}{12 \times 22} = \frac{110}{264}$$

$$\frac{10}{22} = \frac{10 \times 12}{22 \times 12} = \frac{120}{264}$$

2	8, 4, 6, 12, 22
2	4, 2, 3, 6, 11
2	2, 1, 3, 3, 11
3	1, 1, 3, 3, 11
11	1, 1, 1, 1, 11
	1, 1, 1, 1, 1



Hence, the required ascending order is :

$$\frac{1}{8} < \frac{2}{6} < \frac{5}{12} < \frac{10}{22} < \frac{3}{4}$$

6. Fill in the blanks using '>' or '<' to make correct statements :

Ans. a.  $\frac{5}{6}, \frac{4}{7}, \frac{3}{8}, \frac{7}{6}, \frac{1}{3}$

L.C.M. of 6, 7, 8, 6 and 3 is 168.

Now,

$$\frac{5}{6} = \frac{5 \times 28}{6 \times 28} = \frac{140}{168}$$

$$\frac{4}{7} = \frac{4 \times 24}{7 \times 24} = \frac{96}{168}$$

$$\frac{3}{8} = \frac{3 \times 21}{8 \times 21} = \frac{6}{3168}$$

$$\frac{7}{6} = \frac{7 \times 28}{6 \times 28} = \frac{196}{168}$$

$$\frac{1}{3} = \frac{1 \times 56}{3 \times 56} = \frac{56}{168}$$

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

Hence, the required descending order is  $\frac{7}{6} > \frac{5}{6} > \frac{4}{7} > \frac{3}{8} > \frac{1}{3}$

b.  $\frac{2}{8}, \frac{1}{3}, \frac{4}{5}, \frac{3}{6}, \frac{2}{9}$

L.C.M. 8, 3, 5, 6 and 9 is 360.

Now,

$$\frac{2}{8} = \frac{2 \times 45}{8 \times 45} = \frac{90}{360}$$

$$\frac{1}{3} = \frac{1 \times 120}{3 \times 120} = \frac{120}{360}$$

$$\frac{4}{5} = \frac{4 \times 72}{5 \times 72} = \frac{288}{360}$$

$$\frac{3}{6} = \frac{3 \times 60}{6 \times 60} = \frac{180}{360}$$

$$\frac{2}{9} = \frac{2 \times 40}{9 \times 40} = \frac{80}{360}$$

2	8, 3, 5, 6, 9
2	4, 3, 5, 3, 9
2	2, 3, 5, 3, 9
3	1, 3, 5, 3, 9
3	1, 1, 5, 1, 3
5	1, 1, 5, 1, 1
	1, 1, 1, 1, 1

Hence, the required descending order is :

$$\frac{4}{5} > \frac{3}{6} > \frac{1}{3} > \frac{2}{8} > \frac{2}{9}$$

c.  $\frac{5}{8}, \frac{2}{3}, \frac{1}{4}, \frac{5}{6}, \frac{3}{5}$

L.C.M. of 8, 3, 4, 6 and 5 is 120.

Now,

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

$$\frac{2}{3} = \frac{2 \times 40}{3 \times 40} = \frac{80}{120}$$

$$\frac{1}{4} = \frac{1 \times 30}{4 \times 30} = \frac{30}{120}$$

$$\frac{5}{6} = \frac{5 \times 20}{6 \times 20} = \frac{100}{120}$$

$$\frac{3}{5} = \frac{3 \times 24}{5 \times 24} = \frac{72}{120}$$

2	8, 3, 4, 6, 5
2	4, 3, 2, 3, 5
2	2, 3, 1, 3, 5
3	1, 3, 1, 3, 5
5	1, 1, 1, 1, 5
	1, 1, 1, 1, 1

Hence, the required descending order is :

$$\frac{5}{6} > \frac{2}{3} > \frac{5}{8} > \frac{3}{5} > \frac{1}{4}$$

d.  $\frac{17}{18}, \frac{4}{9}, \frac{31}{36}, \frac{2}{3}, \frac{25}{27}$

L.C.M. of 18, 9, 36, 3 and 27 is 108.

Now,

$$\frac{17}{18} = \frac{17 \times 6}{18 \times 6} = \frac{102}{108}$$

$$\frac{4}{9} = \frac{4 \times 12}{9 \times 12} = \frac{48}{108}$$

$$\frac{31}{36} = \frac{31 \times 3}{36 \times 3} = \frac{93}{108}$$

$$\frac{2}{3} = \frac{2 \times 36}{3 \times 36} = \frac{72}{108}$$

$$\frac{25}{27} = \frac{25 \times 4}{27 \times 4} = \frac{100}{108}$$

2	18, 9, 36, 3, 27
2	9, 9, 18, 3, 27
3	9, 9, 9, 3, 27
3	3, 3, 3, 1, 9
3	1, 1, 1, 1, 3
	1, 1, 1, 1, 1

Hence, the required descending order is :

$$\frac{17}{18} > \frac{25}{27} > \frac{31}{36} > \frac{2}{3} = \frac{4}{9}$$

e.  $\frac{15}{18}, \frac{16}{17}, \frac{3}{6}, \frac{4}{9}, \frac{5}{7}$

L.C.M. of 18, 17, 6, 9 and 7 is 2142

Now,

$$\frac{15}{18} = \frac{15 \times 119}{18 \times 119} = \frac{1785}{2142}$$

$$\frac{16}{17} = \frac{16 \times 126}{17 \times 126} = \frac{2016}{2142}$$

$$\frac{3}{6} = \frac{3 \times 357}{6 \times 357} = \frac{1071}{2142}$$

$$\frac{4}{9} = \frac{4 \times 238}{9 \times 238} = \frac{952}{2142}$$

2	18, 17, 6, 9, 7
3	9, 17, 3, 9, 7
3	3, 17, 1, 3, 7
7	1, 17, 1, 1, 7
17	1, 17, 1, 1, 1
	1, 1, 1, 1, 1

$$\frac{5}{7} = \frac{5 \times 306}{7 \times 306} = \frac{1530}{2142}$$

Hence, the required descending order is :

$$\frac{16}{17} > \frac{15}{18} > \frac{5}{7} > \frac{3}{6} > \frac{4}{9}$$

f.  $\frac{7}{28}, \frac{5}{42}, \frac{3}{14}, \frac{4}{7}, \frac{13}{56}$

L.C.M. of 28, 42, 14, 7 and 56 is 168.

$$\begin{aligned} \frac{7}{28} &= \frac{7 \times 6}{28 \times 6} = \frac{42}{168} \\ \frac{5}{42} &= \frac{5 \times 4}{42 \times 4} = \frac{20}{168} \\ \frac{3}{14} &= \frac{3 \times 12}{14 \times 12} = \frac{36}{168} \\ \frac{4}{7} &= \frac{4 \times 24}{7 \times 24} = \frac{96}{168} \\ \frac{13}{56} &= \frac{13 \times 3}{56 \times 3} = \frac{39}{168} \end{aligned}$$

2	28, 42, 14, 7, 56
2	14, 21, 7, 7, 28
2	7, 21, 7, 7, 14
3	7, 21, 7, 7, 7
7	7, 7, 7, 7, 7
	1, 1, 1, 1, 1

Hence, the required descending order is :

$$\frac{4}{7} > \frac{7}{28} > \frac{13}{56} > \frac{3}{14} > \frac{5}{42}$$

g.  $\frac{13}{17}, \frac{3}{7}, \frac{8}{11}, \frac{2}{9}, \frac{3}{15}$

L.C.M. of 17, 7, 11, 9 and 15 is 58905.

Now,

$$\begin{aligned} \frac{13}{17} &= \frac{13 \times 3465}{17 \times 3465} = \frac{45045}{58905} \\ \frac{3}{7} &= \frac{3 \times 8415}{7 \times 8415} = \frac{25245}{58905} \\ \frac{8}{11} &= \frac{8 \times 5355}{11 \times 5355} = \frac{42840}{58905} \\ \frac{2}{9} &= \frac{2 \times 6545}{9 \times 6545} = \frac{13090}{58905} \\ \frac{3}{15} &= \frac{3 \times 3927}{15 \times 3927} = \frac{11781}{58905} \end{aligned}$$

3	17, 7, 11, 9, 15
3	17, 7, 11, 3, 5
5	17, 7, 11, 1, 5
7	17, 7, 11, 1, 1
11	17, 1, 11, 1, 1
17	17, 1, 1, 1, 1
	1, 1, 1, 1, 1

Hence, the required descending order is :

$$\frac{13}{17} > \frac{8}{11} > \frac{3}{7} > \frac{2}{9} > \frac{3}{15}$$

h.  $\frac{11}{23}, \frac{5}{21}, \frac{7}{17}, \frac{8}{19}, \frac{15}{27}$

L.C.M. of 23, 21, 17, 19 and 27 is 1404081.

Now,

$$\begin{aligned} \frac{11}{23} &= \frac{11 \times 61047}{23 \times 61047} = \frac{671517}{1404081} \\ \frac{5}{21} &= \frac{5 \times 66861}{21 \times 66861} = \frac{334305}{1404081} \\ \frac{7}{17} &= \frac{7 \times 82593}{17 \times 82593} = \frac{578151}{1404081} \\ \frac{8}{19} &= \frac{8 \times 73899}{19 \times 73899} = \frac{591192}{1404081} \\ \frac{15}{27} &= \frac{15 \times 52003}{27 \times 52003} = \frac{780045}{1404081} \end{aligned}$$

3	23, 21, 17, 19, 27
3	23, 7, 17, 19, 9
3	23, 7, 17, 19, 3
7	23, 7, 17, 19, 1
17	23, 1, 17, 19, 1
19	23, 1, 1, 19, 1
23	23, 1, 1, 1, 1
	1, 1, 1, 1, 1

Hence, the required descending order is :

$$\frac{15}{27} > \frac{11}{23} > \frac{18}{19} > \frac{7}{17} > \frac{5}{21}$$

### Exercise 4.4

#### 1. Fill in the boxes:

Ans. a.  $\frac{2}{3} + \frac{4}{12} = \frac{12}{12}$

b.  $\frac{1}{3} + \frac{2}{9} + \frac{7}{18} = \frac{17}{18}$

c.  $2\frac{1}{9} + \frac{5}{8} = 2\frac{53}{72}$

d.  $2\frac{1}{6} + 3\frac{1}{2} + 5\frac{3}{2} = 12\frac{1}{6}$

#### 2. Add the following unlike fractions :

Ans. a.  $\frac{9}{16} + \frac{3}{8} = \frac{9+6}{16} = \frac{15}{16}$

b.  $\frac{6}{16} + \frac{5}{8} = \frac{6+10}{16} = \frac{16}{16} = 1$

c.  $\frac{1}{2} + \frac{3}{4} + \frac{5}{8} = \frac{4+6+5}{8} = \frac{15}{8} = 1\frac{7}{8}$

d.  $\frac{1}{3} + \frac{2}{9} + \frac{7}{18} = \frac{6+4+7}{18} = \frac{17}{18}$

e.  $\frac{9}{35} + \frac{6}{7} + \frac{8}{25} = \frac{45+150+56}{175} = \frac{251}{175} = 1\frac{76}{175}$

f.  $\frac{128}{1} + \frac{3}{14} + \frac{5}{7} = \frac{128 \times 14 + 3 + 5 \times 2}{14} = \frac{1805}{14} = 128\frac{13}{14}$

**3. Add the following mixed fractions :**

**Ans.** a.  $4\frac{1}{5} + 3\frac{1}{10} = 4 + 3 + \frac{1}{5} + \frac{1}{10}$

(Add the shall parts and fractional part separately)

$$= 7 + \frac{2+1}{10} = 7 + \frac{3}{10} = 7\frac{3}{10}$$

b.  $3\frac{1}{10} + 11\frac{1}{5} + 16\frac{2}{5} = (3 + 11 + 16) + \frac{1}{10} + \frac{1}{5} + \frac{2}{5}$

(Add the shall parts and fractional part separately)

$$= 30 + \left(\frac{1+2+4}{10}\right) = 30 + \frac{7}{10} = 30\frac{7}{10}$$

c.  $5\frac{4}{9} + 4\frac{2}{3} + 1\frac{1}{6}$

(Add the shall parts and fractional parts separately)

$$= (5 + 4 + 1) + \frac{4}{9} + \frac{2}{3} + \frac{1}{6}$$

$$= 10 + \left(\frac{8+12+3}{18}\right)$$

$$= 10 + \frac{23}{18} = 10 + 1\frac{5}{18} = 11\frac{5}{18}$$

L.C.M. of 9, 3, 6 is 18.

d.  $10\frac{1}{3} + \frac{2}{3} + 5\frac{3}{6}$

(Add the whole parts and fractional parts separately)

$$= (10 + 0 + 5) + \left(\frac{1}{2} + \frac{2}{3} + \frac{3}{6}\right)$$

$$= 15 + \left(\frac{2+4+3}{6}\right) = 15 + \frac{9}{6} = 15 + 1\frac{3}{6} = 16\frac{3}{6} = 16\frac{1}{2}$$

e.  $2\frac{1}{12} + 5\frac{1}{4} + 14\frac{2}{3}$

(Add the whole parts and fractional parts separately)

$$= (2 + 5 + 14) + \left(\frac{1}{12} + \frac{1}{4} + \frac{2}{3}\right)$$

$$= 21 + \left(\frac{1+3+8}{12}\right) = 21 + \left(\frac{12}{12}\right) = 21 + 1 = 22$$

f.  $6\frac{1}{12} + 1\frac{2}{6} + 14\frac{2}{4}$

(Add the whole parts and fractional parts separately)

$$= (6 + 1 + 14) + \left(\frac{1}{12} + \frac{2}{6} + \frac{2}{4}\right)$$

$$= 21 + \left( \frac{1+4+6}{12} \right) = 21\frac{11}{12} = 21\frac{11}{12}$$

(Add the whole parts and fractional parts separately)

**4. Find the sum of mixed and proper fractions :**

**Ans.** a.  $3\frac{4}{7} + \frac{6}{8}$

$$= (3+0) + \left( \frac{4}{7} + \frac{6}{8} \right) \quad \text{L.C.M. of 7 and 8 = 56}$$

$$= 3 + \left( \frac{32+42}{56} \right)$$

$$= 3 + \frac{74}{56} = 3 + \frac{37}{28} = 3 + 1\frac{9}{28} = 4\frac{9}{28}$$

b.  $3\frac{1}{8} + \frac{2}{6}$

$$= (3+0) + \left( \frac{1}{8} + \frac{2}{6} \right)$$

$$= 3 + \left( \frac{1+6}{18} \right) = 3 + \frac{7}{18} = 3\frac{7}{18}$$

c.  $3 + 1\frac{1}{5}$

$$= 3 + 1 + \frac{1}{5} = 4 + \frac{1}{5} = 4\frac{1}{5}$$

d.  $6\frac{1}{3} + \frac{3}{10} = (6+0) + \left( \frac{1}{3} + \frac{3}{10} \right)$

$$= 6 + \left( \frac{10+9}{30} \right) = 6 + \frac{19}{30} = 6\frac{19}{30}$$

e.  $2\frac{1}{6} + \frac{2}{3} = (2+0) + \left( \frac{1}{6} + \frac{2}{3} \right)$

$$= 2 + \left( \frac{1+4}{6} \right) = 2 + \frac{5}{6} = 2\frac{5}{6}$$

(f)  $5\frac{3}{8} + \frac{4}{12} + 3\frac{1}{3}$

$$= (5+0+3) + \left( \frac{3}{8} + \frac{4}{12} + \frac{1}{3} \right) \text{L.C.M. of 8 and 3 is 24.}$$

$$= 8 + \left( \frac{3}{8} + \frac{1}{3} + \frac{1}{3} \right)$$

$$= 8 + \left( \frac{3}{8} + \frac{2}{3} \right)$$

$$= 8 + \left( \frac{9+16}{24} \right) = 8 + \frac{25}{24} = 8 + 1\frac{1}{24} = 9\frac{1}{24}$$

### Exercise 4.5

#### 1. Fill in the boxes :

Ans. a.  $2\frac{3}{5} - \frac{12}{15} = \boxed{1\frac{11}{15}}$

b.  $\frac{6}{20} - \frac{4}{30} = \boxed{\frac{1}{6}}$

c.  $12\frac{1}{5} - \frac{1}{5} = \boxed{12}$

d.  $\frac{4}{5} - \frac{3}{8} = \boxed{\frac{17}{40}}$

#### 2. Subtract the following unlike fractions :

Ans. a.  $\frac{5}{12} - \frac{5}{16} = \left( \frac{20-15}{48} \right)$   
 $= \frac{5}{48}$

L.C.M. of 12 and 16 is 48.

b.  $\frac{8}{17} - \frac{5}{34} = \left( \frac{16-5}{34} \right)$   
 $= \frac{11}{34}$

L.C.M. of 17 and 34 is 34.

c.  $\frac{5}{6} - \frac{7}{9} = \left( \frac{15-14}{18} \right)$   
 $= \frac{1}{18}$

L.C.M. of 6 and 9 is 18.

d.  $\frac{5}{11} - \frac{4}{12} = \frac{5}{11} - \frac{1}{3}$   
 $= \frac{15-11}{33} = \frac{4}{33}$

L.C.M. 11 and 3 is 33.

e.  $\frac{7}{15} - \frac{3}{10} = \frac{14-9}{30}$   
 $= \frac{5}{30} = \frac{1}{6}$

L.C.M. of 15 and 10 is 30.

f.  $\frac{23}{24} - \frac{15}{16} = \frac{46-45}{48} = \frac{1}{48}$

L.C.M. of 24 and 16 is 48.

#### 3. Subtract the following mixed fractions :

Ans. a.  $15\frac{2}{3} - 7\frac{1}{2} = \frac{47}{3} - \frac{15}{2}$   
 $= \frac{47 \times 2 - 15 \times 3}{6} = \frac{94 - 45}{6}$

L.C.M. of 3 and 2 is 6.

$$= \frac{49}{6}$$

$$= 8\frac{1}{6}$$

- b.  $13\frac{1}{2} - 5\frac{3}{4} = \frac{27}{2} - \frac{23}{4}$  L.C.M. of 2 and 4 is 4.  
 $= \frac{54 - 23}{4} = \frac{31}{4} = 7\frac{3}{4}$
- c.  $3\frac{5}{7} - 2\frac{3}{8} = \frac{26}{7} - \frac{19}{8}$  L.C.M. of 7 and 8 is 56.  
 $= \frac{26 \times 8 - 19 \times 7}{56} = \frac{208 - 133}{56} = \frac{75}{56} = 1\frac{19}{56}$
- d.  $7\frac{5}{20} - 2\frac{3}{8} = \frac{145}{20} - \frac{19}{8}$  L.C.M. of 8 and 20 is 40.  
 $= \frac{145 \times 2 - 19 \times 5}{40} = \frac{290 - 95}{40} = \frac{195}{40} = \frac{39}{8} = 4\frac{7}{8}$
- e.  $5\frac{7}{8} - 1\frac{3}{8} = \frac{47}{8} - \frac{11}{8} = \frac{36}{8} = 4\frac{4}{8}$   
 $= 4\frac{1}{2}$
- f.  $15\frac{1}{3} - 8\frac{2}{6} = \frac{46}{3} - \frac{50}{6}$  L.C.M. of 3 and 6 is 6.  
 $= \frac{46 \times 2 - 50 \times 1}{6} = \frac{92 - 50}{6} = \frac{42}{6} = 7$

### Exercise 4.6

1. Sum of two fractions = 8  
 One fraction =  $2\frac{3}{5} = \frac{13}{5}$   
 $\therefore$  Other fraction =  $\frac{8}{1} - \frac{13}{5}$   
 $= \frac{8 \times 5 - 13}{5} = \frac{40 - 13}{5}$   
 $= \frac{27}{5} = 5\frac{2}{5}$   
 Hence, the other fraction is  $5\frac{2}{5}$ .
2. The height of a pole =  $5\frac{3}{8}$  m.  
 Distance climbed by lizard on it =  $1\frac{3}{8}$  m.  
 $\therefore$  Required distance to reach the top =  $5\frac{3}{8}$  m -  $1\frac{3}{8}$  m  
 $= \frac{43}{8}$  m -  $\frac{11}{8}$  m



$$= \left( \frac{43-11}{8} \right) \text{m} = \frac{32}{8} \text{m} = 4 \text{m}$$

Hence, the required distance is 4 m.

3. Total length of an electric pole =  $3\frac{5}{8}$

Point of the pole below the ground =  $1\frac{1}{8}$  m

$$\begin{aligned} \therefore \text{The length of the pole above the ground} &= 3\frac{5}{8} \text{m} - 1\frac{1}{8} \text{m} \\ &= \frac{29}{8} \text{m} - \frac{9}{8} \text{m} \\ &= \left( \frac{29-9}{8} \right) \text{m} \\ &= \frac{20}{8} \text{m} = 2\frac{4}{8} \text{m} = 2\frac{1}{2} \text{m} \end{aligned}$$

Hence, the length of the pole above the ground is  $2\frac{1}{2}$  m.

$$\begin{aligned} \therefore \text{Total sells of milk by Ramu in the entire day} &= 6\frac{1}{10} l + 7\frac{1}{5} l \\ &= \frac{61}{10} l + \frac{35}{5} l \\ &= \left( \frac{61}{10} + \frac{36}{5} \right) l \\ &= \left( \frac{61+72}{10} \right) l \\ &= \frac{133}{10} l = 13\frac{3}{10} l. \end{aligned}$$

Hence, the total sells of milk is  $13\frac{3}{10} l$ .

5. Anita's weight =  $62\frac{2}{5}$  kg

Her mother's weight =  $89\frac{3}{5}$  kg

$$\begin{aligned} \therefore \text{Weight of mother more than Anita} &= 89\frac{3}{5} \text{kg} - 62\frac{2}{5} \text{kg} \\ &= \frac{89 \times 5 + 3}{5} \text{kg} - \frac{(62 \times 5 + 2)}{5} \text{kg} \\ &= \left( \frac{445+3}{5} - \frac{310+2}{5} \right) \text{kg} \end{aligned}$$

$$= \left( \frac{448 - 312}{5} \right) \text{kg}$$

$$= \frac{136}{5} \text{kg} = 27\frac{1}{5} \text{kg}$$

Hence, the required weight is  $27\frac{1}{5}$  kg.

6. Distance of Rashmi's house from her school =  $2\frac{3}{5}$  km  
and distance of Manoj's house from his school =  $1\frac{1}{5}$  km

$$\text{Required difference in distance} = \left( 2\frac{3}{5} - 1\frac{1}{5} \right) \text{km}$$

$$= \left( \frac{13}{5} - \frac{6}{5} \right) \text{km} = \frac{7}{5} \text{km} = 1\frac{2}{5} \text{km}$$

Hence, Rashmi's house is for away na dby the distance of  $1\frac{2}{5}$  km.

7. Total amount of sugar in the stock =  $135\frac{3}{5}$  kg  
Sells of sugar in two days =  $2 \times \left( 25\frac{1}{5} \right) \text{kg} = 2 \times \frac{126}{5} \text{kg} = \frac{252}{5} \text{kg}$

$$\therefore \text{The remaining stock of sugar after two days}$$

$$= 135\frac{3}{5} \text{kg} - \frac{252}{5} \text{kg}$$

$$= \left( \frac{675 + 3}{5} - \frac{252}{5} \right) \text{kg}$$

$$= \left( \frac{678 - 252}{5} \right) \text{kg} = \frac{426}{5} \text{kg} = 85\frac{1}{5} \text{kg}$$

Hence, the remaining stock of sugar is  $85\frac{1}{5}$  kg.

8. Money spent by Sushma in a picnic = ₹  $50\frac{1}{6}$

$$\text{Money spent on her way to picnic} = ₹ 3\frac{1}{3}$$

$$\text{Total amount of money with Shushma} = ₹ 115\frac{3}{5}$$

$$\text{Total spent money by Sushma} = ₹ \left( 50\frac{1}{6} + 3\frac{1}{3} \right)$$

$$= ₹ \left( 50 + 3 + \frac{1}{6} + \frac{1}{3} \right)$$

$$= 53 + \left(\frac{1+2}{6}\right) = 53\frac{3}{6}$$

$$= ₹ 53\frac{1}{2}$$

$$\therefore \text{Let amount of money with Sushma} = ₹ \left(115\frac{3}{5} - 5\frac{1}{2}\right)$$

$$= ₹ \left(\frac{575+3}{5} - \frac{107}{2}\right)$$

$$= ₹ \left(\frac{578}{5} - \frac{107}{2}\right)$$

$$= ₹ \left(\frac{578 \times 2 - 107 \times 5}{10}\right)$$

$$= ₹ \left(\frac{1156 - 535}{10}\right) = ₹ \frac{631}{10}$$

$$= ₹ 62\frac{1}{10}$$

Hence, the left money with Sushma is ₹  $62\frac{1}{10}$ .

### Exercise 4.7

#### 1. Fill in the boxes :

Ans. a.  $\frac{1}{6} \times 4 = \boxed{\frac{2}{3}}$

b.  $\frac{7}{18} \times 36 = \boxed{14}$

c.  $7 \times \frac{1}{21} = \boxed{\frac{1}{3}}$

d.  $\frac{5}{6} \times \frac{12}{30} = \boxed{\frac{1}{3}}$

#### 2. Multiply :

Ans. a.  $\frac{9}{10} \times \frac{8}{15} = \frac{\cancel{3} \times \cancel{8}^4}{\cancel{10}_5 \times \cancel{15}_3} = \frac{3 \times 4}{5 \times 5} = \frac{12}{25}$  b.  $\frac{3}{7} \times \frac{4}{7} = \frac{12}{35}$

c.  $\frac{2}{3} \times \frac{1}{3} = \frac{2}{9}$

d.  $\frac{1}{5} \times \frac{1}{6} = \frac{1}{30}$

e.  $8\frac{7}{2} = \frac{52}{2} = 28$

f.  $7 \times \frac{2}{14} = \frac{14}{14} = 1$

#### 3. Find :

Ans. a.  $\frac{4}{9}$  of  $\frac{2}{3} = \frac{4}{9} \times \frac{2}{3} = \frac{4 \times 2}{9 \times 3} = \frac{8}{27}$

b.  $\frac{1}{3}$  of  $\frac{1}{6} = \frac{1}{3} \times \frac{1}{6} = \frac{1 \times 1}{3 \times 6} = \frac{1}{18}$

c.  $7\frac{1}{2}$  of  $\frac{1}{8} = \frac{15}{2} \times \frac{1}{8} = \frac{15 \times 1}{2 \times 8} = \frac{15}{16}$

d.  $\frac{1}{4}$  of  $\frac{29}{13} = \frac{1}{4} \times \frac{24}{13} = \frac{1 \times \cancel{24}^6}{\cancel{4} \times 13} = \frac{6}{13}$

e.  $\frac{3}{8}$  of  $\frac{1}{2} = \frac{3}{8} \times \frac{1}{2} = \frac{3 \times 1}{8 \times 2} = \frac{3}{16}$

f.  $\frac{1}{3}$  of  $3\frac{3}{5} = \frac{1}{3} \times \frac{18}{5} = \frac{6}{5} = 1\frac{1}{5}$

**4. Find the product :**

Ans. a.  $\frac{1}{3} \times \frac{2}{5} \times \frac{3}{4} = \frac{1 \times 2 \times 3}{3 \times 5 \times \cancel{4}_2} = \frac{3}{30} = \frac{1}{10}$

b.  $1\frac{1}{4} \times 1\frac{1}{3} \times 1\frac{2}{3} = \frac{5}{4} \times \frac{4}{3} \times \frac{5}{3} = \frac{25}{9} = 2\frac{7}{9}$

c.  $15 \times \frac{3}{5} = \frac{\cancel{15}^3 \times 3}{5_1} = 3 \times 3 = 9$

d.  $\frac{\cancel{1}_1}{\cancel{4}_1} \times \frac{\cancel{8}^2}{\cancel{4}_2} \times \frac{1}{\cancel{3}_3} = \frac{1 \times 2 \times 1}{1 \times 2 \times 3} = \frac{1 \times 1 \times 1}{1 \times 2 \times 3} = \frac{1}{6}$

e.  $\frac{5}{1} \times \frac{3}{20} \times \frac{2}{5} = \frac{1 \times 1 \times 2}{1 \times 4 \times 5} = \frac{1}{10}$

f.  $4\frac{1}{2} \times \frac{6}{1} \times 3\frac{3}{9} = \frac{9}{2} \times \frac{6}{1} \times \frac{30}{9} = 3 \times 30 = 90$

**Exercise 4.8**

1. Time spent for morning exercise every day =  $\frac{2}{3}$  hour

Number of days in a month = 30

$$\begin{aligned} \therefore \text{Total time spent in a month for exercise} &= 30 \times \frac{2}{3} \text{ hours} \\ &= \frac{30 \times 2}{3} \text{ hour} = 20 \text{ hours} \end{aligned}$$

hence, the required time is 20 hours.

2. Part of a cake =  $\frac{4}{5}$

Eaten part of this cake =  $\frac{1}{2}$

Eaten amount of cake by Meenakshi =  $\frac{1}{2}$  of  $\frac{4}{5} = \frac{1}{2} \times \frac{4}{5} = \frac{2}{5}$

Hence, the eaten part of cake is  $\frac{2}{5}$ .

3. Distance covered by a train in an hour = 320 km.

$$\begin{aligned} \therefore \text{Distance covered by train in } 1\frac{1}{4} \text{ hours} &= 320 \times 1\frac{1}{4} \text{ km.} \\ &= 80 \times \frac{5}{4} \text{ km} = 400 \text{ km.} \end{aligned}$$

Hence, the required distance is 400 km.

4. Time taken by Reena to paint a table =  $\frac{1}{4}$  hours.

$\therefore$  Time taken by Reena to paint 24 such tables =  $24 \times \frac{1}{4}$  hours = 6 hours.

Hence, the required time is 6 hours.

5. Total money = ₹ 180

Money purchasing for a dress =  $\frac{2}{9}$  of ₹ 180 =  $\frac{2}{9} \times ₹ 180 = ₹ 40$

∴ Left money with Rahul = ₹ 180 - ₹ 40 = ₹ 140

Hence, the left money with Rahul is ₹ 140.

### Exercise 4.9

1. Fill in the blanks :

Ans. a. Reciprocal of  $2\frac{3}{5}$  is  $\boxed{\frac{5}{13}}$ .      b. Reciprocal of  $\frac{7}{19}$  is  $\boxed{\frac{19}{7}}$ .

c.  $\frac{100}{3}$  divided by 10 =  $\boxed{\frac{10}{3}}$       d.  $\frac{7}{15} \div 5 = \boxed{\frac{7}{75}}$

2. Find :

Ans. a.  $4\frac{9}{10} \div \frac{1}{2} = \frac{49}{10} \div \frac{1}{2} = \frac{49}{10} \times \frac{2}{1} = 9\frac{4}{5}$

b.  $\frac{3}{19} \div \frac{19}{3} = \frac{3}{19} \times \frac{3}{19} = \frac{9}{361}$

c.  $1\frac{2}{5} \div 1\frac{1}{5} = \frac{7}{5} \div \frac{6}{5} = \frac{7}{5} \times \frac{5}{6} = 1\frac{1}{6}$

d.  $27 \div \frac{9}{10} = \frac{27}{1} \times \frac{10}{9} = 3 \times 10 = 30$

e.  $35 \div 1\frac{1}{4} = \frac{35}{1} \times \frac{4}{1} = 7 \times 4 = 28$

f.  $65 \div \frac{1}{5} = \frac{65}{1} \times \frac{5}{1} = 65 \times 5 = 325$

3. Divide :

Ans. a. 4 by  $\frac{2}{5} = 4 \div \frac{2}{5} = \frac{4}{1} \times \frac{5}{2} = 10$

b. 32 by  $\frac{4}{5} = 32 \div \frac{4}{5} = \frac{32}{1} \times \frac{5}{4} = 8 \times 5 = 40$

c.  $2\frac{7}{9}$  by  $\frac{5}{3} = \frac{25}{9} \div \frac{5}{3} = \frac{25}{9} \times \frac{3}{5} = 1\frac{2}{3}$

d.  $3\frac{2}{5}$  by  $\frac{34}{25} = \frac{17}{5} \div \frac{34}{25} = \frac{17}{5} \times \frac{25}{34} = \frac{5}{2} = 2\frac{1}{2}$

e. 64 by  $\frac{4}{3} = \frac{64}{1} \div \frac{4}{3} = \frac{64}{1} \times \frac{3}{4} = 48$

f.  $\frac{7}{8}$  by  $\frac{1}{2} = \frac{7}{8} \div \frac{1}{2} = \frac{7}{8} \times \frac{2}{1} = \frac{7}{4}$

### Exercise 4.10

1. Distance covered by an aeroplane in  $2\frac{1}{5}$  hours = 1568 km.

$$\begin{aligned}\therefore \text{Distance covered by this aeroplane in one hour} &= 1568 \div 2\frac{1}{5} \text{ km} \\ &= 1568 \div \frac{11}{5} \text{ km} \\ &= \frac{1568}{1} \times \frac{5}{11} \text{ km} \\ &= \frac{7840}{11} \text{ km} \\ &= 712\frac{8}{11} \text{ km}\end{aligned}$$

Hence, the required distance is  $712\frac{8}{11}$  km.

2. The product of two numbers = 48

$$\text{One number} = 4\frac{5}{9}$$

$$\therefore \text{the other number} = 48 \div 4\frac{5}{9} = \frac{48}{1} \div \frac{41}{9} = \frac{48}{1} \times \frac{9}{41} = \frac{432}{41} = 10\frac{22}{41}.$$

Hence, the other number is  $10\frac{22}{41}$ .

3. Total length of a piece of wire =  $8\frac{3}{5}$  m.

It is cut into 15 equal pieces.

$$\therefore \text{The length of each equal piece} = \left(8\frac{3}{5} \div \frac{15}{1}\right) \text{ m} = \frac{43}{5} \times \frac{1}{15} \text{ m} = \frac{43}{75} \text{ m}$$

Hence, the length of the equal piece is  $\frac{43}{75}$  m.

4. Distance covered by an express train in  $5\frac{1}{2}$  hours = 916 km

$$\begin{aligned}\therefore \text{The distance covered by this train in one hour} &= 916 \div 5\frac{1}{2} \text{ km} \\ &= \frac{916}{1} \div \frac{11}{2} \text{ km} \\ &= \frac{916}{1} \times \frac{2}{11} = \frac{1832}{11} \text{ km} = 166\frac{6}{11} \text{ km}\end{aligned}$$

Hence, the required distance covered by train is  $166\frac{6}{11}$  km.

5. Cost of 10 mangoes = ₹  $2\frac{4}{7}$ .

∴ Cost of 1 mango = ₹  $2\frac{4}{7} \div 10 = ₹ \frac{18}{7} \times \frac{1}{10} = ₹ \frac{9}{35}$

So, the price (cost) of 14 mangoes = ₹  $\frac{9}{35} \times 14 = ₹ \frac{18}{5} = ₹ 3\frac{3}{5}$

Hence, the price of 14 mangoes is ₹  $3\frac{3}{5}$ .

6. The price of two blankets = ₹ 450

∴ Price of one blanket = ₹  $450 \div 2 = ₹ 225$

So, the price of 5 such blankets = ₹  $225 \times 5 = ₹ 1125$ .

hence, the price of 5 blankets is ₹ 1125.

7. Total length of a piece of wire =  $\frac{8}{9}$  of a metre.

This wire cut into pieces of  $\frac{1}{9}$  of a metre in length.

So, the required number of small pieces =  $\frac{8}{9}$  of a metre  $\div \frac{1}{9}$  of a metre  
 $= \frac{8}{9} \times \frac{9}{1} = 8$

Hence, the required number of pieces are 8.

8. Kiran's salary = ₹ 5,250.

Spent money for buying dresses and shoes =  $\frac{5}{7}$  of salary

$= \frac{5}{7} \times ₹ 5,250$

$= ₹ 750 \times 5 = ₹ 3750$ .

Hence, the spend money by Kiran is ₹ 3750.

### MCQs

Ans. 1. (ii); 2. (iv); 3. (i); 4. (ii); 5. (ii); 6. (iv); 7. (iii).



## 5 Decimals

### Exercise 5.1

1. Match the following :

- |             |                            |
|-------------|----------------------------|
| Ans. a. 3.9 | iii. Three and nine tenths |
| b. 4.6      | i. Four and six tenths     |
| c. 1.1      | ii. One and one tenths     |
| d. 3.4      | v. Three and four tenths   |
| e. 6.7      | iv. Six and seven tenths   |

2. Form a decimal with :

Ans. a. 5.3

b. 304.06

3. Show the following decimals in the place value chart :

Ans.

Question Part	Hundreds	Tens	Ones	Decimal	Tenths	Hundredths	Thousandths
a.	—	2	5	.	6	3	—
b.	1	2	5	.	6	3	—
c.	—	1	3	.	7	6	3
d.	1	5	5	.	4	3	—

4. Find the place value of the underlined digit in the following decimals :

	Underline digit in decimals	Place value
Ans. a.	1 <u>6</u> .235	6
b.	178. <u>6</u> 98	$\frac{9}{100}$ or 0.009
c.	345. <u>6</u> 38	$\frac{8}{1000}$ or 0.008
d.	20. <u>6</u> 78	20
e.	25. <u>1</u> 87	$\frac{1}{10}$ or 0.1
f.	187. <u>6</u> 98	80
g.	1234. <u>5</u>	1000
h.	40.21 <u>8</u> 7	$\frac{7}{10000} = 0.0007$

5. Fill in the blanks :

Ans. a. decimal

b. hundredths, thousandths

c. zero

d. tenths

e. less

### Exercise 5.2

1. Change the following common fractions into the decimal fractions :

Ans. a.	$\frac{5}{10} = 0.5$	b.	$\frac{12}{1000} = 0.002$	c.	$\frac{6}{100} = 0.06$
d.	$\frac{30}{1000} = \frac{3}{100} = 0.03$	e.	$\frac{37}{100} = 0.37$	f.	$\frac{196}{1000} = 0.196$
g.	$\frac{769}{100} = 7.69$	h.	$1\frac{1}{10} = \frac{11}{10} = 1.1$	i.	$\frac{196}{10} = 19.6$
j.	$\frac{1}{1000} = 0.001$	k.	$4\frac{7}{1000} = \frac{4007}{1000} = 4.007$		
l.	$4\frac{7}{100} = \frac{407}{100} = 4.07$				



2. Change the following decimal fractions into common fractions :

Ans. a.  $0.5 = \frac{5}{10}$       b.  $0.7 = \frac{7}{10}$       c.  $0.07 = \frac{7}{100}$   
 d.  $0.17 = \frac{17}{100}$       e.  $0.009 = \frac{9}{1000}$       f.  $0.072 = \frac{72}{1000}$   
 g.  $0.719 = \frac{719}{1000}$       h.  $0.178 = \frac{178}{1000}$       i.  $0.172 = \frac{172}{1000}$   
 j.  $2.75 = \frac{275}{100}$       k.  $47.39 = \frac{4739}{100}$       l.  $472.961 = \frac{472961}{1000}$

**Exercise 5.3**

1. Write the following in short forms in decimal fraction :

Ans. a. 865.276      b. 965.379      c. 236.156  
 d. 965.767      e. 67.69      f. 8325.758

2. Write these decimals in expanded form :

Ans. a.  $1.67 = 1 + \frac{6}{10} + \frac{7}{100}$       b.  $7.776 = 7 + \frac{7}{10} + \frac{7}{100} + \frac{6}{1000}$   
 c.  $3.86 = 3 + \frac{8}{10} + \frac{6}{100}$       d.  $3.334 = 3 + \frac{3}{10} + \frac{3}{100} + \frac{4}{1000}$   
 e.  $8.008 = 8 + \frac{8}{1000}$       f.  $88.45 = 80 + 8 + \frac{4}{10} + \frac{5}{100}$

**Exercise 5.4**

1. Fill in the blanks with equivalent decimals :

Ans. a.  $0.8 = 0.80 = \mathbf{0.800}$       b.  $37.5 = \mathbf{37.50} = \mathbf{37.500}$   
 c.  $1.8 = 1.80 = \mathbf{1.800}$       d.  $3.9 = \mathbf{3.90} = 3.900$   
 e.  $62.7 = 62.70 = \mathbf{62.700}$       f.  $42.7 = \mathbf{42.70} = 42.700$

2. Choose whether the following groups of decimal fractions are like or unlike :

Ans. a. Like Decimal      b. Like Decimal  
 c. Unlike Decimal      d. Unlike Decimal  
 e. Like Decimal      f. Unlike Decimal

3. Convert each group of unlike decimal fractions to like decimal fractions :

Ans. a. 9.100, 3.750, 1.992      b. 5.300, 6.790, 1.739  
 c. 7.300, 3.967, 6.070      d. 139.156, 13.970, 14.200  
 e. 4.500, 16.500, 17.967      f. 7.050, 8.570, 6.197

**Exercise 5.5**

1. Fill in the blanks (using the symbols '>' or '<') :

Ans. a.  $59.753 < 60.753$       b.  $33.523 > 33.522$   
 c.  $182.550 > 181.550$       d.  $60.035 < 60.125$

2. Compare the following decimals :

Ans. a.  $23.058 > 15.635$       b.  $121.650 > 12.650$   
 c.  $195.650 < 195.780$       d.  $51.354 < 120.380$

**3. Arrange the following in ascending order :**

- Ans.** a. 14.739; 19.135; 73.197; 74.65  
b. 20.150; 61.932; 615.132, 732.156  
c. 16.29; 41.114; 78.03; 219.045  
d. 110.16; 110.261; 211.28; 218.63

**4. Arrange the following in descending order :**

- Ans.** a. 805.732; 769.371; 615.872; 196.132  
b. 865.175; 719.675; 197.862; 1821.391  
c. 429.62; 354.216; 169.234; 148.799  
d. 610.110; 544.029; 411.105; 316.119

**Exercise 5.6**

**1. Arrange the following in columns and add in your exercise book :**

**Ans.** a.  $463.73 + 24.921 + 1.007$   
$$\begin{array}{r} 436.730 \\ 24.921 \\ +1.007 \\ \hline 489.658 \end{array}$$

b.  $36 + 4.89 + 215.105 + 0.479$   
$$\begin{array}{r} 36.000 \\ 4.890 \\ 215.105 \\ +1.479 \\ \hline 256.474 \end{array}$$

c.  $32.215 + 4.869 + 72.19$   
$$\begin{array}{r} 32.215 \\ 4.869 \\ +72.190 \\ \hline 109.190 \end{array}$$

d.  $43.968 + 9.698 + 4.198$   
$$\begin{array}{r} 43.968 \\ 9.698 \\ +4.198 \\ \hline 57.864 \end{array}$$

e.  $72.925 + 83.927 + 65.218$   
$$\begin{array}{r} 72.925 \\ 83.927 \\ +65.218 \\ \hline 222.070 \end{array}$$

f.  $35.149 + 346.078 + 105.019$   
$$\begin{array}{r} 34.149 \\ 346.078 \\ +105.019 \\ \hline 486.246 \end{array}$$

**2. Arrange the following in columns and subtract in your exercise book :**

**Ans.** a.  $145.146 - 129.982 = 15.164$   
$$\begin{array}{r} 145.146 \\ -129.982 \\ \hline 15.164 \end{array}$$

b.  $109.659 - 83.756 = 25.903$   
$$\begin{array}{r} 109.659 \\ -83.756 \\ \hline 25.903 \end{array}$$

c.  $83.7 - 25.929 = 57.771$   
$$\begin{array}{r} 83.700 \\ -25.929 \\ \hline 57.771 \end{array}$$

d.  $25.168 - 24.953 = 0.215$   
$$\begin{array}{r} 25.168 \\ -24.953 \\ \hline 0.215 \end{array}$$

e.  $396.005 - 155.197 = 240.808$       f.  $42.445 - 39.783 = 2.662$

$$\begin{array}{r} 396.005 \\ -155.197 \\ \hline 240.808 \end{array}$$

$$\begin{array}{r} 42.445 \\ -39.783 \\ \hline 2.662 \end{array}$$

**3. Solve the following in your exercise book :**

**Ans.** a. Sum of  $43.125 + 72.059 = 115.184$   
From  $115.184$  take  $83.196$   
 $= 115.184 - 83.196$   
 $= 31.988$

$$\begin{array}{r} 43.125 \\ +72.059 \\ \hline 115.184 \end{array}$$

$$\begin{array}{r} 115.184 \\ -83.196 \\ \hline 31.988 \end{array}$$

b. Subtract  $129.468$  from  $320$   
 $= 129.532$  add  $79.66$   
 $= 270.192$

$$\begin{array}{r} 320.000 \\ -129.468 \\ \hline 190.532 \\ +79.660 \\ \hline 270.192 \end{array}$$

c. Difference between  $81.245$  and  $35.629$   
 $= 81.245 - 35.629 = 45.616$

$$\begin{array}{r} 81.245 \\ -35.629 \\ \hline 45.616 \end{array}$$

Sum of  $146.2$  and  $69.458 = 215.658$

$$+215.658$$

$\therefore$  Difference + Sum  $= 45.616 + 215.658 = 261.274$

$$\begin{array}{r} 261.274 \end{array}$$

d. (i) Sum of  $192.38$  and  $245.47$   
 $= 192.38 + 245.47$   
 $= 437.85$

$$\begin{array}{r} 192.38 \\ +245.47 \\ \hline 437.850 \end{array}$$

(ii) Sum of  $723.945$  and  $62.38 = 786.325$

$$786.325$$

Subtract (i) sum from (ii) sum

$$-437.850$$

$786.325 - 437.85$

$$\begin{array}{r} 348.475 \end{array}$$

$= 348.475$

e. Difference of  $172.84$  and  $95.99$

$172.84 - 95.99 = 76.85$

$$\begin{array}{r} 172.84 \\ -95.99 \\ \hline 76.85 \end{array}$$

$$\begin{array}{r} 76.85 \\ +125.06 \\ \hline 201.91 \end{array}$$

Add difference  $76.85$  and  $125.06$

$76.85 + 125.06 = 201.91$

f. (i) Sum of  $845.647$  and  $73.49$   
 $= 845.647 + 73.49$   
 $= 919.137$

$$\begin{array}{r} 845.647 \\ +73.490 \\ \hline 919.137 \end{array}$$

(ii) Sum of  $291.48$  and  $196.81$

$291.48 + 196.81 = 488.29$

$$\begin{array}{r} 291.48 \\ +196.81 \\ \hline 488.29 \end{array}$$

$\therefore$  Subtract ii sum from i sum

$= 919.137 - 488.290$

$$\begin{array}{r} 919.137 \\ -488.290 \\ \hline 430.847 \end{array}$$

$= 430.847$

### Exercise 5.7

**1. Multiply the following :**

**Ans.** a.  $3.45 \times 15 = \mathbf{51.75}$

$$\begin{array}{r} 3.45 \\ \times 15 \\ \hline 17.25 \\ + 34.50 \\ \hline \boxed{51.75} \end{array}$$

b.  $65.56 \times 12 = \mathbf{786.72}$

$$\begin{array}{r} 65.56 \\ \times 12 \\ \hline 13112 \\ + 65560 \\ \hline \boxed{786.72} \end{array}$$

c.  $15.23 \times 17 = \mathbf{258.91}$

$$\begin{array}{r} 15.23 \\ \times 17 \\ \hline 10661 \\ + 15230 \\ \hline \boxed{258.91} \end{array}$$

d.  $6.38 \times 23 = \mathbf{146.74}$

$$\begin{array}{r} 6.38 \\ \times 23 \\ \hline 19.14 \\ + 122.00 \\ \hline \boxed{146.74} \end{array}$$

e.  $75.78 \times 21 = \mathbf{1591.38}$

$$\begin{array}{r} 75.78 \\ \times 21 \\ \hline 7578 \\ + 151560 \\ \hline \boxed{1591.38} \end{array}$$

f.  $325.1 \times 18 = \mathbf{5851.8}$

$$\begin{array}{r} 325.1 \\ \times 18 \\ \hline 2600.8 \\ + 3251.0 \\ \hline \boxed{5851.8} \end{array}$$

g.  $12.48 \times 36 = \mathbf{449.28}$

$$\begin{array}{r} 12.48 \\ \times 36 \\ \hline 74.88 \\ + 374.40 \\ \hline \boxed{449.28} \end{array}$$

h.  $93.78 \times 43 = \mathbf{4032.54}$

$$\begin{array}{r} 93.78 \\ \times 43 \\ \hline 281.34 \\ + 3751.20 \\ \hline \boxed{4032.54} \end{array}$$

i.  $16.75 \times 75 = \mathbf{1256.25}$

$$\begin{array}{r} 16.75 \\ \times 75 \\ \hline 83.75 \\ 1172.50 \\ \hline \boxed{1256.25} \end{array}$$

**2. Find the product :**

**Ans.** a.  $0.7 \times 1.2 = \mathbf{0.84}$

b.  $1.5 \times 6.5 = \mathbf{9.75}$

$$\begin{array}{r} 1.5 \\ \times 6.5 \\ \hline 7.5 \\ + 90.0 \\ \hline \boxed{9.75} \end{array}$$

c.  $6.7 \times 1.9 = 12.73$

$$\begin{array}{r} 6.7 \\ \times 1.9 \\ \hline 60.3 \\ + 6.70 \\ \hline \boxed{12.73} \end{array}$$

d.  $1.33 \times 1.4 = 1.862$

$$\begin{array}{r} 1.33 \\ \times 1.4 \\ \hline 532 \\ + 1330 \\ \hline \boxed{1.862} \end{array}$$

e.  $1.023 \times 14 = 14.322$

$$\begin{array}{r} 1.023 \\ \times 14 \\ \hline 4092 \\ + 10230 \\ \hline \boxed{14.322} \end{array}$$

f.  $2.379 \times 2.2 = 5.2338$

$$\begin{array}{r} 4.365 \\ \times 4.4 \\ \hline 17460 \\ + 174600 \\ \hline \boxed{192060} \end{array}$$

g.  $4.365 \times 4.4 = 19.2060$

$$\begin{array}{r} 2.379 \\ \times 2.2 \\ \hline 4758 \\ + 47580 \\ \hline \boxed{5.2338} \end{array}$$

h.  $7.013 \times 1.3 = 9.1169$

$$\begin{array}{r} 7.013 \\ \times 1.3 \\ \hline 21039 \\ + 70130 \\ \hline \boxed{9.1169} \end{array}$$

i.  $6.312 \times 1.6 = 10.0992$

$$\begin{array}{r} 6.312 \\ \times 16 \\ \hline 37872 \\ + 63120 \\ \hline \boxed{10.0992} \end{array}$$

j.  $4.02 \times 1.02 = 4.1004$

$$\begin{array}{r} 4.02 \\ \times 1.02 \\ \hline 8.04 \\ \phantom{00}00 \\ + 4.0200 \\ \hline \boxed{4.1004} \end{array}$$

k.  $6.155 \times 0.25 = 1.53875$

$$\begin{array}{r} 6.155 \\ \times 0.25 \\ \hline 30775 \\ + 1.23100 \\ \hline \boxed{1.53875} \end{array}$$

l.  $3.33 \times 1.4 = 4.662$

$$\begin{array}{r} 3.33 \\ \times 1.4 \\ \hline 1332 \\ \phantom{00}330 \\ \hline \boxed{4.662} \end{array}$$

### Exercise 5.8

1. Multiply by shifting the decimal point according to the number of zeroes :

- Ans. a. 36.5      b. 7280      c. 8625      d. 7120  
 e. 8450      f. 5      g. 690.5      h. 74500

2. Find the multipliers for the following :

- Ans. c. 1000      d. 10      e. 1000      f. 10  
 g. 100      h. 1000

3. Find the multiplicands for the following :

- Ans. a. 100      b. 4.567      c. 3.58      d. 7.216  
 e. 0.3457      f. 34.67      g. 143.49      h. 24.95

### Exercise 5.9

**2. Perform the following divisions :**

- Ans.** a.  $4.21 \div 10 = 0.421$                       b.  $21.34 \div 10 = 2.134$   
 c.  $5.01 \div 10 = 0.501$                       d.  $5.73 \times 10 = 0.573$   
 e.  $33.008 \div 10 = 3.30085$                   f.  $7.89 \div 10 = 0.789$   
 g.  $6.02 \div 10 = 0.602$                       h.  $71.01 \div 10 = 7.101$

**2. Find the quotient :**

- Ans.** a.  $7.3 \div 100 = 0.073$                       b.  $1.89 \div 100 = 0.0189$   
 c.  $6.67 \div 100 = 0.0667$                       d.  $18.2 \div 100 = 0.182$   
 e.  $2.36 \div 100 = 0.0236$                       f.  $9.82 \div 100 = 0.0982$   
 g.  $25.41 \div 100 = 0.2541$                       h.  $0.84 \div 100 = 0.0084$

**3. Divide :**

- Ans.** a.  $1.05$  by  $1000 = 1.05 \div 1000 = 0.00105$   
 b.  $0.95$  by  $1000 = 0.95 \div 1000 = 0.00095$   
 c.  $8.95$  by  $1000 = 8.95 \div 1000 = 0.00895$   
 d.  $7.08$  by  $100 = 7.08 \div 100 = 0.0708$   
 e.  $4.43$  by  $1000 = 4.43 \div 1000 = 0.00443$   
 f.  $62.7$  by  $1000 = 62.7 \div 1000$   
 g.  $5.91$  by  $1000 = 5.91 \div 1000 = 0.00591$   
 h.  $16.03$  by  $1000 = 16.03 \div 1000 = 0.01603$

**4. Perform the following divisions :**

- Ans.** a.  $50.7 \div 6 = 8.45$                               b.  $99.1 \div 5 = 19.82$

$$\begin{array}{r} 8.45 \\ 6 \overline{)50.70} \\ \underline{-48} \phantom{0} \\ 27 \phantom{0} \\ \underline{-24} \phantom{0} \\ 30 \\ \underline{-30} \\ 0 \end{array}$$

$$\begin{array}{r} 19.82 \\ 5 \overline{)99.10} \\ \underline{-5} \phantom{0} \\ 49 \\ \underline{-45} \\ 41 \\ \underline{-40} \\ 10 \\ \underline{-10} \\ 0 \end{array}$$

- c.  $84.91 \div 7 = 12.13$

$$\begin{array}{r} 12.13 \\ 7 \overline{)84.91} \\ \underline{-7} \phantom{0} \\ 14 \\ \underline{-14} \\ 09 \\ \underline{-7} \\ 21 \\ \underline{-21} \\ 0 \end{array}$$

- d.  $237.84 \div 12 = 19.82$

$$\begin{array}{r} 19.82 \\ 12 \overline{)237.84} \\ \underline{-12} \phantom{0} \\ 117 \\ \underline{-108} \\ 98 \\ \underline{-96} \\ 24 \\ \underline{-24} \\ 0 \end{array}$$

e.  $201.2 \div 8 = 25.15$

$$\begin{array}{r} 25.15 \\ 8 \overline{) 201.20} \\ \underline{-16} \phantom{0} \\ 41 \phantom{0} \\ \underline{-40} \phantom{0} \\ 12 \phantom{0} \\ \underline{-8} \phantom{0} \\ 40 \\ \underline{-40} \\ 0 \end{array}$$

f.  $276.25 \div 17 = 16.25$

$$\begin{array}{r} 16.25 \\ 17 \overline{) 276.25} \\ \underline{-17} \phantom{0} \\ 106 \phantom{0} \\ \underline{-102} \phantom{0} \\ 42 \phantom{0} \\ \underline{-34} \phantom{0} \\ 85 \\ \underline{-85} \\ 0 \end{array}$$

g.  $1026.6 \div 40 = 25.665$

$$\begin{array}{r} 25.665 \\ 40 \overline{) 1026.600} \\ \underline{-80} \phantom{00} \\ 226 \phantom{0} \\ \underline{-200} \phantom{0} \\ 266 \phantom{0} \\ \underline{-240} \phantom{0} \\ 260 \phantom{0} \\ \underline{-240} \phantom{0} \\ 200 \phantom{0} \\ \underline{-200} \\ 0 \end{array}$$

h.  $305.2 \div 50 = 6.104$

$$\begin{array}{r} 6.104 \\ 50 \overline{) 305.200} \\ \underline{-300} \phantom{00} \\ 52 \phantom{0} \\ \underline{-50} \phantom{0} \\ 200 \phantom{0} \\ \underline{-200} \\ 0 \end{array}$$

**5. Divide :**

Ans. a.  $5.18 \div 0.37$   
 $= \frac{5.18}{0.37} = \frac{518}{37} = 14$

$$\begin{array}{r} 14 \\ 37 \overline{) 518} \\ \underline{-37} \phantom{0} \\ 148 \\ \underline{-148} \\ 0 \end{array}$$

b.  $0.936 \div 1.3$   
 $= \frac{0.936}{1.3} = \frac{936}{13} = 0.72$

$$\begin{array}{r} 0.72 \\ 13 \overline{) 9.36} \\ \underline{-91} \phantom{0} \\ 26 \\ \underline{-26} \\ 0 \end{array}$$

c.  $25.1 \div 2.7$

$$\begin{array}{r} 9.296 \\ 27 \overline{) 251.000} \\ \underline{-243} \phantom{00} \\ 80 \phantom{0} \\ \underline{-54} \phantom{0} \\ 260 \phantom{0} \\ \underline{-243} \phantom{0} \\ 170 \phantom{0} \\ \underline{-162} \\ 8 \end{array}$$

$= \frac{25.1}{2.7} = \frac{251}{27}$   
 $= 9.296 = 9.3$

d.  $49.653 \div 8.1$

$$\begin{array}{r} 6.13 \\ 81 \overline{) 496.53} \\ \underline{-486} \phantom{00} \\ 105 \phantom{0} \\ \underline{-81} \phantom{0} \\ 243 \\ \underline{-243} \\ 0 \end{array}$$

$= \frac{49.653}{8.1} = \frac{496.53}{81} = 6.13$

e.  $9.5 \div 0.95$

$$= \frac{9.5}{0.95} = \frac{950}{95} = 10$$

f.  $60.25 \div 1.25$

$$\begin{array}{r} 48.2 \\ 125 \overline{)6025.0} \\ \underline{-500} \\ 1025 \\ \underline{-1000} \\ 250 \\ \underline{-250} \\ 0 \end{array}$$

$$= \frac{60.25}{1.25} \\ = \frac{6025}{125} = 48.2$$

g.  $24.2 \div 0.44$

$$\begin{array}{r} 55 \\ 44 \overline{)2420} \\ \underline{-220} \\ 220 \\ \underline{-220} \\ 0 \end{array}$$

$$= \frac{24.2}{0.44} \\ = \frac{2420}{44} = 55$$

h.  $1.875 \div 0.25$

$$\begin{array}{r} 7.5 \\ 25 \overline{)187.5} \\ \underline{-175} \\ 125 \\ \underline{-125} \\ 0 \end{array}$$

$$= \frac{1.875}{0.25} \\ = \frac{187.5}{25} = 7.5$$

### Exercise 5.10

#### 1. Convert the following into l and then kl :

Ans. a.  $956507 \text{ ml} = 956.507 \text{ l}$

$956.507 \text{ l} = 0.956507 \text{ kl}$

b.  $853247 \text{ ml} = 853.247 \text{ l}$

$853.247 \text{ l} = 0.85247 \text{ kl}$

c.  $752124 \text{ ml} = 752.124 \text{ l}$

$752.124 \text{ l} = 0.752124 \text{ kl}$

d.  $42863 \text{ ml} = 42.863 \text{ l}$

$42.863 \text{ l} = 0.042863 \text{ kl}$

#### 2. Convert the following into g and kg :

$1 \text{ mg} = 0.001 \text{ g}$  and  $1 \text{ g} = 0.001 \text{ kg}$

Ans. a.  $652141 \text{ mg} = 652.141 \text{ g}$

$652.141 \text{ g} = 0.652141 \text{ kg}$

b.  $554566 \text{ mg} = 554.566 \text{ g}$

$554.566 \text{ g} = 0.554566 \text{ kg}$

c.  $443443 \text{ mg} = 443.443 \text{ g}$

$443.443 \text{ g} = 0.443443 \text{ kg}$

d.  $239161 \text{ mg} = 239.161 \text{ g}$

$239.161 \text{ g} = 0.239161 \text{ kg}$

#### 3. Convert the following into m and km :

Ans.  $1 \text{ cm} = 0.01 \text{ m}$  and  $1 \text{ m} = 0.001 \text{ km}$

a.  $63342 \text{ cm} = 633.42 \text{ m}$

$633.42 \text{ m} = 0.63342 \text{ km}$

b.  $55466 \text{ cm} = 554.66 \text{ m}$

$554.66 \text{ m} = 0.55466 \text{ km}$

c.  $23366 \text{ cm} = 233.66 \text{ m}$

$233.66 \text{ m} = 0.23366 \text{ km}$

d.  $21369 \text{ cm} = 213.69 \text{ m}$

$213.69 \text{ m} = 0.21369 \text{ km}$



**4. Convert the following into gram and milligrams :**

**Ans.**  $1 \text{ kg} = 1000 \text{ g}$  and  $1 \text{ g} = 1000 \text{ mg}$

- |  |  |
|--|--|
| a. $0.35 \text{ kg} = 350 \text{ g}$<br>$350 \text{ g} = \mathbf{350000 \text{ mg}}$ | b. $0.47 \text{ kg} = 470 \text{ g}$<br>$470 \text{ g} = \mathbf{470000 \text{ mg}}$ |
| c. $0.16 \text{ kg} = 160 \text{ g}$<br>$160 \text{ g} = \mathbf{160000 \text{ g}}$  | d. $0.41 \text{ kg} = 410 \text{ g}$<br>$410 \text{ g} = \mathbf{41000 \text{ mg}}$  |

**5. Convert the following into kg :**

**Ans.**  $1 \text{ g} = 0.001 \text{ kg}$

- |  |  |
|--|--|
| a. $42.3 \text{ g} = \mathbf{0.0423 \text{ kg}}$ | b. $26.5 \text{ g} = \mathbf{0.0265 \text{ kg}}$ |
| c. $37.2 \text{ g} = \mathbf{0.0372 \text{ kg}}$ | d. $3307 \text{ g} = \mathbf{3.307 \text{ kg}}$  |

**6. Convert the following into m and mm :**

**Ans.**  $1 \text{ km} = 1000 \text{ m}$  and  $1 \text{ m} = 1000 \text{ mm}$

- |   |   |
|---|---|
| a. $6.38 \text{ km} = 6380 \text{ m}$<br>$6380 \text{ m} = \mathbf{6380000 \text{ mm}}$ | b. $8.46 \text{ km} = 8460 \text{ m}$<br>$8460 \text{ m} = \mathbf{8460000 \text{ mm}}$ |
| c. $3.23 \text{ km} = 3230 \text{ m}$<br>$3230 \text{ m} = \mathbf{3230000 \text{ mm}}$ | d. $7.18 \text{ km} = 7180 \text{ m}$<br>$7180 \text{ m} = \mathbf{7180000 \text{ mm}}$ |

**7. Convert the following into km and mm :**

**Ans.**  $1 \text{ m} = 0.001 \text{ km}$  and  $1 \text{ m} = 1000 \text{ mm}$

- |   |  |
|---|--|
| a. $7.6 \text{ m} = 0.0076 \text{ km}$<br>$7.6 \text{ m} = \mathbf{7600 \text{ mm}}$          | b. $5.2 \text{ m} = 0.0052 \text{ km}$<br>$5.2 \text{ m} = \mathbf{5200 \text{ mm}}$         |
| c. $8.3 \text{ m} = \mathbf{0.0083 \text{ km}}$<br>$8.3 \text{ m} = \mathbf{8300 \text{ mm}}$ | d. $3.6 \text{ m} = \mathbf{0.0036 \text{ km}}$<br>$36 \text{ m} = \mathbf{3600 \text{ mm}}$ |

**8. Convert the following into kg and mg :**

**Ans.**  $1 \text{ g} = 0.001 \text{ kg}$  and  $1 \text{ g} = 1000 \text{ mg}$

- |   |   |
|---|---|
| a. $7.13 \text{ g} = 0.00713 \text{ kg}$<br>$7.13 \text{ g} = \mathbf{7130 \text{ mg}}$ | b. $2.12 \text{ g} = 0.00212 \text{ kg}$<br>$2.12 \text{ g} = \mathbf{2120 \text{ mg}}$ |
| c. $7.27 = 0.00727 \text{ kg}$<br>$7.27 \text{ g} = \mathbf{7270 \text{ mg}}$           | d. $3.28 \text{ g} = 0.00328 \text{ kg}$<br>$3.28 \text{ g} = \mathbf{3280 \text{ mg}}$ |

**9. Convert the following into ml :**

**Ans.**  $1 \text{ l} = 1000 \text{ ml}$

- |   |
|---|
| a. $4.5 \text{ l} = \mathbf{4500 \text{ ml}}$ |
| b. $7.3 \text{ l} = \mathbf{7300 \text{ ml}}$ |
| c. $9.2 \text{ l} = \mathbf{9200 \text{ ml}}$ |
| d. $3.6 \text{ l} = \mathbf{3600 \text{ ml}}$ |

**MCQs**

- |                           |             |             |             |
|---------------------------|-------------|-------------|-------------|
| <b>Ans.</b> 1. iii. 3.101 | 2. i. 98.01 | 3. iv. 1.21 | 4. ii. 34.5 |
| 5. ii. 13                 | 6. i 10     | 7. ii. 100  | 8. ii. 7180 |