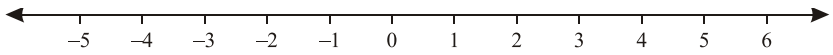
Step-up **Mathematics-7**

1 Integers : Multiplication and Division

Exercise 1.1

1. (a) The represention of temperature on the number line.



(b) March is the hottest month and January is the coldest months.

(c) The temperature difference 3 *C* (–2 *C*) 3 *C* 2 *C* 5 *C*

(d) The temperature difference 1 *C* 0 *C* 1 *C*

2. (a) (10) (14) (10) (14) (b) (31) 17 29 25 8 (29)

(c) 23 40 (51) 23 51 40 (d) 17 (22) (35) 35 (51) (36)

3. The temperature on Tuesday 6 (4 *C*) 6 4 10 *C*

The temperature on Wednesday 10 *C* 3 *C* 7 *C*

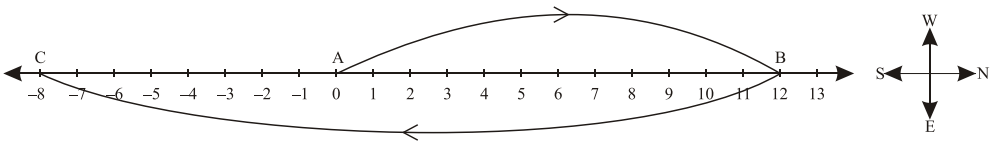
The temperature on Thursday 7 *C* 1 *C* 6 *C*

4. The height of a plane 5500 m

The deep of a submarine 730 m

the vertical distance between them 5500 (730) 5500 730 6230 m

5.



The distance travelled towards south 20 m

Therefore 12 m (20 m) 8 m

Thus, Rohan's final position will be 8 m at point C.

Exercise 1.2

1. (a) 12 7 84 (b) 8 8 64 (c) 9 (11) 99

(d) 6 (5) 30 (e) 0 (45) 0

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

6 (8) (35) (4) 42 (9)

48 35 4 140 378

(d) (11) (21) 0 0 (34) (e) (2) (5) (4) (10)

231 0 0 (34) 0 0 0 10 40 400

3. (a) (3) 5 (3) 3 (3) [5 3] (3) 8 24

(b) 7 (13) 7 (10) 7 [(13) (10)] (By distributive property of multiplication)

7 (23) 161

(c) 10 (4) 5 (4) (4) [10 5] (By distributive property of multiplication)

(4) 15 60

(d) (12) (7) (12) (3)

(12) [(7) (3)] (By distributve property of multiplication.)

(12) [10] 120

4.

Makes a profit on product A ₹ 52

total profit on product A ₹ 52 3600

₹ 187200

Makes a loss on product B ₹ 10

total loss on product B ₹ 10 4000

₹ 40000

Grand profit total profit on product A total loss on product B

₹ (187200 40000)

₹ 147200

Exercise 1.3

1. Using BODMAS rule and order of brackets.

(a) 75 (5) 15 (b) 36 (12) 3 (c) 34 (17) 2 (d) 0 (98) 0

2. (a) 45 ÷ **(–9)** 5 (b) **–60** ÷ (–12) 5 (c) 23 ÷ **(–23)** 1

(d) –11 ÷ **-11** 1 (e) **–76** ÷ (–2) 38

3. (a) True (b) False (c) False (d) True

Exercise 1.4

1. Using BODMAS rule and order of brackets.

(a) 25 12 (9 3)

25 12 6

25 2

23

(b) 29 [38 {40 2 (6 9 3) 3}]

29 [38 {40 2 (6 3) 3}]

29 [38 {20 1}]

29 [38 19] 29 19 10

(c) $14 \frac{1}{2}\{13 \quad 2 \quad (7 \quad 5 \quad \overline{2 \quad 3})\}$

$14 \frac{1}{2}\{13 \quad 2 \quad (7 \quad 5 \quad 5)\}$

$14 \frac{1}{2}\{13 \quad 2 \quad (7)\}$

$14 \frac{1}{2}\{13 \quad 2 \quad 7\}$

$14 \frac{1}{2}\{15 \quad 7\}$

$14 \frac{1}{2} \quad 8 \quad 14 \quad 4 \quad 10$

(d) $14 \frac{1}{5}[\{ 10 \quad (25 \quad \overline{13 \quad 3})\} \quad (5)]$

$14 \frac{1}{5}[\{ 10 \quad (25 \quad 10)\} \quad (5)]$

$14 \frac{1}{5}[\{ 10 \quad 15\} \quad (5)]$

$14 \frac{1}{5}[(150) \quad (5)]$

$14 \frac{1}{5} \quad 30$

14 6 20

(e) $27 \frac{1}{4}\{ 5 \quad (48) \quad (16)\}$

$27 \frac{1}{4}\{ 5 \quad 3\}$

$27 \frac{1}{4} \quad (8)$

27 (2)

27 2 29

(f) 5 (48) 12 (2) 6

5(4) (12)

5 4 12

4 17

13

(g) 140 12 [3 4 {2 3 2 (8)}]

140 12 [3 4 {6 16}]

(h) $120 \frac{1}{17}[3 \quad 4\{2 \quad 3 \quad 2 \quad (8)\}]$

$120 \frac{1}{17}[3 \quad 4\{6 \quad 16\}]$

140 12 [3 4{22}] 120 $\frac{1}{17}$[3 4 22]

140 12 [3 88] 120 $\frac{1}{17}$[3 88]

140 12 [85] 120 $\frac{1}{17}$ 85

140 1020 1160 120 5 125

2. (a) 7 6 (4) or 8 (2) (8)(1)

L.H.S. 7 6 (4) R.H.S 8 (2) (8)(1)

7 (24) 8 (2) 8

17 8 (16) 8 16 24

L.H.S R.H.S

7 6 (4) 8 (2) (8)(1)

(b) (4) (22) 4 (3) or (2) (1) (1) (2)

L.H.S. (4) (22) 4 (3) R.H.S (2) (1) (1) (2)

(88) 4 (3) 2 2 4

(88) (12) 1056

L.H.S. R.H.S

(4) (22) 4 (3) (2) (1) (1) (2)

(c) (9) (2) (2) (7) or (9) (2) (2) 7

L.H.S. (9) (2) (2) (7) R.H.S. (9) (2) (2) 7

18 (14) 18 14

$\frac{18}{14}$ $\frac{9}{7}$ $1\frac{2}{7}$ $\frac{18}{14}$ $\frac{9}{7}$ $1\frac{2}{7}$

L.H.S R.H.S

(9) (2) (2) (7) > (9) (2) (2) 7

MCQ.s

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

2 Fractions

Exercise 2.1

1. (a) $\frac{2}{7}$ of 63 $\frac{2}{7}$ 63 2 9 18

(b) $\frac{3}{4}$ of 62 $\frac{3}{4}$ 62 $\frac{3}{2}$ $\frac{31}{2}$ $\frac{93}{2}$

(c) $\frac{1}{6}$ of $2\frac{3}{4}$ $\frac{1}{6}$ $\frac{11}{4}$ $\frac{11}{24}$

(d) $\frac{2}{3}$ of 51 $\frac{2}{3}$ 51 2 17 34

2. (a) $\frac{4}{7}$ of $2\frac{3}{4}$ $\frac{4}{7}$ $\frac{11}{4}$ $\frac{11}{7}$ $1\frac{4}{7}$

(b) $3\frac{1}{7}$ 2 $\frac{22}{7}$ 2 $\frac{44}{7}$ $6\frac{2}{7}$

(c) $\frac{1}{2}$ of $2\frac{1}{2}$ $\frac{1}{2}$ $\frac{5}{2}$ $\frac{5}{4}$ $1\frac{1}{4}$

(d) $\frac{3}{4}$ of $5\frac{1}{7}$ $\frac{3}{4}$ $\frac{36}{7}$ $\frac{3}{7}$ $\frac{9}{7}$ $\frac{27}{7}$ $3\frac{6}{7}$

3. The fraction are :

$\frac{2}{3}$ of 3 $\frac{2}{3}$ 3 2, $\frac{1}{3}$ of $\frac{12}{7}$ $\frac{1}{3}$ $\frac{12}{7}$ $\frac{4}{7}$

$\frac{7}{3}$ of $\frac{3}{4}$ $\frac{7}{3}$ $\frac{3}{4}$ $\frac{7}{4}$ and $\frac{1}{5}$ of $\frac{15}{4}$ $\frac{1}{5}$ $\frac{15}{4}$ $\frac{3}{4}$

So, the fraction are $2, \frac{4}{7}, \frac{7}{4}$ and $\frac{3}{4}$.

Which is unlike fractions.

denominator of the fractions are 1, 7, 4 and 4.

LCM of 1, 7, 4 and 4 28

So, we convert each one of the given fraction into an equivalent fraction with denominator 28.

$$2 \quad \frac{2 \quad 28}{1 \quad 28} \quad \frac{56}{28}; \frac{4}{7} \quad \frac{4 \quad 4}{7 \quad 4} \quad \frac{16}{28};$$

$$\frac{7}{4} \quad \frac{7 \quad 7}{4 \quad 7} \quad \frac{49}{28}; \frac{3}{4} \quad \frac{3 \quad 7}{4 \quad 7} \quad \frac{21}{28}$$

Clearly, $\frac{56}{28} \quad \frac{49}{28} \quad \frac{21}{28} \quad \frac{16}{28}$

$$2 \quad \frac{7}{4} \quad \frac{3}{4} \quad \frac{4}{7}$$

Thus, the descending order : $\frac{2}{3}$ of 3 $\frac{7}{3}$ of $\frac{3}{4}$ $\frac{1}{5}$ of $\frac{15}{4}$ $\frac{1}{3}$ of $\frac{12}{7}$.

4. (a) $11\frac{1}{4} \quad 3\frac{1}{5} \quad 4\frac{2}{3} \quad 5\frac{6}{7} \quad \frac{11 \quad 4 \quad 1}{4} \quad \frac{3 \quad 5 \quad 1}{5} \quad \frac{4 \quad 3 \quad 2}{3} \quad \frac{5 \quad 7 \quad 6}{7}$

$$\frac{44 \quad 1}{4} \quad \frac{15 \quad 1}{5} \quad \frac{12 \quad 2}{3} \quad \frac{35 \quad 6}{7}$$

$$\frac{45}{4} \quad \frac{16}{5} \quad \frac{14}{3} \quad \frac{41}{7}$$

$$(9 \quad 4) \quad \frac{2 \quad 41}{3} \quad 36 \quad \frac{82}{3} \quad \frac{36 \quad 3 \quad 82}{3} \quad \frac{190}{3} \quad 63\frac{1}{3}$$

(b) $6\frac{2}{5} \quad \frac{25}{8} - \frac{4}{3} \quad 1\frac{1}{8} \quad \frac{6 \quad 5 \quad 2}{5} \quad \frac{25}{8} \quad \frac{4}{3} \quad \frac{1 \quad 8 \quad 1}{8}$

$$\frac{32}{5} \quad \frac{25}{8} \quad \frac{4}{3} \quad \frac{9}{8}$$

$$(4 \quad 5) \quad \frac{3}{2} \quad 20 \quad \frac{3}{2} \quad \frac{40 \quad 3}{2} \quad \frac{37}{2} \quad 18\frac{1}{2}$$

(c) $3\frac{1}{4} \quad 3\frac{1}{5} - \frac{2}{3} - \frac{3}{7} \quad \frac{3 \quad 4 \quad 1}{4} \quad \frac{3 \quad 5 \quad 1}{5} \quad \frac{2 \quad 7 \quad 3 \quad 3}{21}$

$$\frac{13}{4} \quad \frac{16}{5} \quad \frac{14 \quad 9}{21}$$

$$\frac{13 \quad 4}{5} \quad \frac{5}{21} \quad \frac{52 \quad 21 \quad 25}{105} \quad \frac{1092 \quad 25}{105} \quad \frac{1067}{105} \quad 10\frac{17}{105}$$

(d) $\frac{3}{11} \quad \frac{5}{22} \quad \frac{14}{9} \quad \frac{5}{6} \quad \frac{3 \quad 2 \quad 5}{22} \quad \frac{14 \quad 2 \quad 5 \quad 3}{18}$

$$\frac{6 \quad 5}{22} \quad \frac{28 \quad 15}{18} \quad \frac{11}{22} \quad \frac{43}{18} \quad \frac{1}{2} \quad \frac{43}{18} \quad \frac{43}{36} \quad 1\frac{7}{36}$$

(e) $4\frac{1}{2} \quad 2\frac{1}{5} \quad 2\frac{2}{3} - \frac{3}{5} \quad 2\frac{2}{3} \quad 3\frac{3}{4}$

$$\frac{4}{2}\ \frac{2}{1}\quad \frac{2}{5}\ \frac{5}{1}\quad \frac{2}{3}\ \frac{3}{2}\quad \frac{3}{5}\quad \frac{2}{3}\ \frac{3}{2}\quad \frac{3}{4}\ \frac{4}{3}$$

$$\frac{9}{2}\quad \frac{11}{5}\quad \frac{8}{3}\qquad \frac{3}{5}\quad \frac{8}{3}\quad \frac{15}{4}$$

$$\frac{3}{5}\ \frac{11}{4}\qquad [3\quad 2]$$

$$\frac{132}{5}\quad 6\quad \frac{132}{5}\ \frac{6}{1}\ \frac{5}{1}\quad \frac{132}{5}\ \frac{30}{1}\quad \frac{102}{5}\quad 20\frac{2}{5}$$

(f) $\frac{6}{25}\ \frac{50}{24} - \frac{5}{9}\ \frac{1}{25}\quad \frac{2}{4}\qquad \frac{1}{9}\ \frac{5}{1}\quad \frac{1}{2}\ \frac{1}{45}\quad \frac{45}{90}\ \frac{2}{1}\quad \frac{43}{90}$

5. The product of given fraction $\frac{7}{45}\ \frac{5}{11}$

$$\frac{7}{9}\ \frac{7}{11}\quad \frac{7}{99}$$

6. A CNG car runs using 1 litre of gas 25km

Therefore, it will run using $5\frac{3}{4}$ litre of gas $25\quad 5\frac{3}{4}$ km

$$25\quad \frac{23}{4}\text{ km}$$

$$\frac{575}{4}\text{ km}$$

$$143\frac{1}{4}\text{ km}$$

7. The product $\frac{66}{7}\ \frac{4}{3}\quad \frac{22}{7}\ \frac{4}{1}\quad \frac{88}{7}\quad 12\frac{4}{7}$

8. According to the questions one third of $\frac{33}{4}$ half of $\frac{11}{2}$

$$\frac{1}{3}\ \frac{33}{4}\quad \frac{1}{2}\ \frac{11}{2}$$

$$\frac{11}{4}\ \frac{11}{4}$$

Yes, the given product of fraction is same.

9. The total number of fruits 240

(a) Therefore, the number of pomegranates $\frac{1}{4}\quad 240$

$$60$$

The number of oranges $\frac{1}{3}\quad 240\quad 80$

And, the number of apples $\frac{1}{5}\quad 240\quad 48$

(b) So, the number of mangoes $(240\quad 60\quad 80\quad 48)$

$$240\quad 188$$

$$52$$

The fraction $\frac{52}{240}\quad \frac{13}{60}$

10. Seema studies everyday 3 hrs

And Roma studies $\frac{1}{2}$ 3 hrs

So, the total time of Roma 5 $\frac{1}{2}$ 3 hrs

$\frac{15}{2}$ hrs

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

11. The distance between the first and last chair (15 1) $\frac{1}{4}$ 1 m

14 $\frac{1}{4}$ m

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

Exercise 2.2

1. (a) The reciprocal of $\frac{1}{5}$ 5

Whch is a whole number.

(b) The reciprocal of $6\frac{1}{7}$ $\frac{7}{43}$

Which is a proper fraction.

(c) The reciprocal of $5\frac{1}{4}$ $\frac{4}{21}$

Which is a proper fraction.

(d) The reciprocal of 1 1

Which is a whole number.

(e) The reciprocal of $\frac{7}{3}$ $\frac{3}{7}$

Which is a proper fraction.

(f) The reciprocal of $\frac{11}{5}$ $\frac{5}{11}$

Which is a proper fraction.

(g) The reciprocal of 8 $\frac{1}{8}$

Which is a proper fraction.

(h) The reciprocal of 27 $\frac{1}{27}$

Which is a proper fraction.

2. (a) 5 $\frac{2}{11}$ 5 $\frac{11}{2}$ $\frac{55}{2}$ $27\frac{1}{2}$

(b) 6 $\frac{9}{5}$ 6 $\frac{5}{9}$ $\frac{30}{9}$ $3\frac{3}{9}$ $3\frac{1}{3}$

(c) $\frac{6}{11}$ 15 $\frac{6}{11}$ $\frac{1}{15}$ $\frac{6}{165}$ $\frac{2}{55}$

(d) $6\frac{4}{5}$ $\frac{7}{35}$ $\frac{34}{5}$ $\frac{35}{7}$ $\frac{34}{7}$ 7 34

(e) $\frac{16}{7}$ $\frac{28}{42}$ $\frac{16}{7}$ $\frac{42}{28}$ $\frac{4}{7}$ 6 $\frac{24}{7}$ $3\frac{3}{7}$

(f) $25\frac{1}{2}$ $\frac{8}{13}$ $\frac{51}{2}$ $\frac{13}{8}$ $\frac{663}{16}$ $41\frac{7}{16}$

(g) $\frac{343}{64}$ $\frac{7}{8}$ $\frac{343}{64}$ $\frac{8}{7}$ $\frac{49}{8}$ $6\frac{1}{8}$

(h) $36\frac{1}{4}$ $8\frac{2}{4}$ $\frac{145}{4}$ $\frac{34}{4}$ $\frac{145}{4}$ $\frac{4}{34}$ $\frac{145}{34}$ $4\frac{9}{34}$

3. (a) $5\frac{1}{4}$ $\frac{16}{7}$ $\frac{2}{3}$ $\frac{21}{4}$ $\frac{16}{7}$ $\frac{3}{2}$ (3 4) $\frac{3}{2}$ 12 $\frac{3}{2}$ 6 3 18

(b) $18\frac{2}{9}$ $9\frac{1}{9}$ $1\frac{1}{3}$ $\frac{164}{9}$ $\frac{82}{9}$ $\frac{4}{3}$ $\frac{164}{9}$ $\frac{9}{82}$ $\frac{3}{4}$ 2 $\frac{3}{4}$ $\frac{3}{2}$ $1\frac{1}{2}$

(c) $2\frac{1}{7}$ $2\frac{4}{5}$ $\frac{1}{10}$ $\frac{15}{7}$ $\frac{14}{5}$ $\frac{1}{10}$ (3 2) $\frac{1}{10}$ 6 10 60

(d) $\frac{4}{15}\ \frac{6}{28}\ \frac{9}{2}\ \frac{6}{15\ \ 7}\ \frac{9}{2}\ \frac{6\ \ 9}{15\ \ 7\ \ 2}\ \frac{3\ \ 3}{5\ \ 7}\ \frac{9}{35}$

(e) $24\ \ 2\frac{2}{3}\ \ 3\frac{1}{9}\ \ 24\ \ \frac{8}{3}\ \ \frac{28}{9}\ \ 24\ \ \frac{3}{8}\ \ \frac{9}{28}\ \ \frac{(3\ \ 3)\ \ 9}{28}\ \ \frac{81}{28}\ \ 2\frac{25}{28}$

(f) $7\ \ 2\frac{2}{5}\ \ \frac{5}{9}\ \ 9\frac{4}{9}\ \ 7\ \ \frac{12}{5}\ \ \frac{5}{9}\ \ \frac{85}{9}\ \ 7\ \ \frac{5}{12}\ \ \frac{5}{9}\ \ \frac{9}{85}\ \ \frac{35}{12}\ \ \frac{1}{17}\ \ \frac{35}{204}$

Exercise 2.3

1. Cost of $6\frac{1}{2}$ m of lace $\quad ₹\ 115\frac{3}{8}$

Therefore, cost of 1 m of lace $\quad ₹\ \ 115\frac{3}{8}\ \ \ 6\frac{1}{2}$

$₹\ \ \frac{923}{8}\ \ \ \frac{13}{2}$

$₹\ \ \frac{923}{8}\ \ \ \frac{2}{13}$

$₹\ \frac{71}{4}\quad ₹\ 17\frac{1}{4}$

2. The duration of one period in a school $\quad \frac{2}{3}$ hrs

the duration of 9 such periods $\quad 9\ \ \frac{2}{3}$ hrs

$3\ \ 2$ hrs

6 hrs

3. Waseem can stitch a frock $\quad \frac{3}{4}$ hrs

So, the required time to stitch 24 frocks $\quad 24\ \ \frac{3}{4}$ hrs

$6\ \ 3$ hours

18 hrs

4. The given side of a square $\quad 16\frac{3}{4}$ m $\quad \frac{67}{4}$ m

the area of a square $\quad \text{side}^2$

the area of a square $\quad \left(\frac{67}{4}\text{ m}\right)^2$

$\frac{4489}{16}\text{ m}^2$

$280\frac{9}{16}\text{ m}^2$

And, the perimeter of a square $\quad 4\ \ \text{side}$

$4\ \ \frac{67}{4}\text{ m}\ \ 67\text{ m}$

Hence, the area and perimeter of a square is $280\frac{9}{16}\text{ m}^2$ and 67 m respectively.

5. A bucket can hold of water $25\frac{3}{4}\,l$

So, $2\frac{2}{3}$ buckets contained water $2\frac{2}{3}\quad 25\frac{3}{4}\,l$

$\frac{8}{3}\quad \frac{103}{4}\,l$

$\frac{206}{3}\,l\quad 68\frac{2}{3}\,l$

6. Distance covered by Amar in 1 hours $5\frac{1}{3}$ km

Distance covered by Amar in $2\frac{1}{4}$ hours $2\frac{1}{4}\quad 5\frac{1}{3}$ km

$\frac{9}{4}\quad \frac{16}{3}$ km $\quad 3\quad 4$ km $\quad 12$ km

7. The weight of one bag of cement $15\frac{2}{3}$ kg

There, the weight of $22\frac{4}{7}$ such bags $15\frac{2}{3}\quad 22\frac{4}{7}$ kg

$\frac{47}{3}\quad \frac{158}{7}$ kg

$353\frac{13}{21}$ kg

8. Let x be multiplied to get 42.

Therefore, $x\quad 9\frac{4}{5}\quad 42$

$x\quad 42\quad \frac{49}{5}$

$42\quad \frac{5}{49}\quad \frac{6\quad 5}{7}\quad \frac{30}{7}\quad 4\frac{2}{7}$

9. The given perimeter of a square $9\frac{1}{11}$ m

The perimeter of a square $\quad 4\quad$ side

$9\frac{1}{11}\quad 4\quad$ side

4 side $\quad \frac{100}{11}$

side $\quad \frac{100}{4\quad 11}\quad \frac{25}{11}$ m

the area of a square $\quad$ side^2

$\frac{25}{11}\text{m}^{\quad 2}\quad \frac{625}{121}\text{m}^2$

$4\frac{9}{121}\text{m}^2$

10. Total weight of toffees $30\frac{3}{8}$ kg

the weight of 1 packets $2\frac{1}{40}$ kg

Number of packets $\frac{\text{Total weight of toffees}}{\text{The weight of 1 packet}}$

$30\frac{3}{8}$ kg $2\frac{1}{40}$ kg

$\frac{243}{8}$ $\frac{81}{40}$ $\frac{243}{8}$ $\frac{40}{81}$

3 5 15

11. The total length of a rope $58\frac{13}{20}$ m

number of ropes 17

the length of each piece $\frac{\text{Total length of a rope}}{\text{Number of ropes}}$

$58\frac{13}{20}$ 17

$\frac{1173}{17\ 20}$ m $\frac{69}{20}$ m $3\frac{9}{20}$ m

12. In a school,

The fraction of boys $\frac{4}{7}$

the fraction of girls $1\ \frac{4}{7}$

$\frac{7\ \ 4}{7}$ $\frac{3}{7}$

total number of students $\frac{\text{Number of girls}}{\text{The fraction of girls}}$

210 $\frac{3}{7}$ 210 $\frac{7}{3}$

70 7 490

the number of boys the toral number of students number of girls

490 210 280

13. Product of two numbers $15\frac{5}{6}$ $\frac{95}{6}$

And, one number $6\frac{1}{3}$ $\frac{19}{3}$

the order number ?

total order number $\frac{\text{Product of two numbers}}{\text{One number}}$

$\frac{95}{6}$ $\frac{19}{3}$ $\frac{95}{6}$ $\frac{3}{19}$

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

14. Distance covered in $9\frac{1}{2}$ hours $432\frac{1}{4}$ km

distance covered in 1 hour $432\frac{1}{4}$ $9\frac{1}{2}$ km

(a) distance covered in $6\frac{1}{2}$ hours $432\frac{1}{4}$ $9\frac{1}{2}$ $6\frac{1}{2}$ km

$\frac{1729}{4}$ $\frac{2}{19}$ $\frac{13}{2}$ km

$\frac{91}{4}$ 13 $\frac{1183}{4}$ km

$295\frac{3}{4}$ km

(b) Time taken to travel $256\frac{31}{50}$ km $256\frac{31}{50}$ $432\frac{1}{4}$ $9\frac{1}{2}$

$\frac{12831}{50}$ $\frac{1729}{4}$ $\frac{19}{2}$

$\frac{12831}{50}$ $\frac{1729}{4}$ $\frac{2}{19}$

$\frac{12831}{50}$ $\frac{4 \quad 19}{1729 \quad 2}$

$\frac{12831}{25}$ $\frac{1}{91}$

$\frac{141}{50}$ hours $5\frac{16}{25}$ hours

MCQ's

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

3 Decimals

Exercis 3.1

1. (a) 94.6 11 $= \frac{946 \quad 11}{10}$ $\frac{10406}{10}$ **1040.6**

(b) 25.645 2 $= \frac{25645 \quad 2}{1000}$ $\frac{51290}{1000}$ **51.29**

(c) 13.459 7 $\frac{13459 \quad 7}{1000}$ $\frac{94213}{1000}$ **94.213**

(d) 0.835 21 $\frac{835 \quad 21}{1000}$ $\frac{17535}{1000}$ **17.535**

(e) 6.145 19 $\frac{6145 \quad 19}{1000}$ $\frac{116755}{1000}$ **116.755**

(f) 12.65 13 $\frac{1265 \quad 13}{100}$ $\frac{16445}{100}$ **164.45**

2. (a) 6.179 10 61.79

(b) 14.007 10 140.07

(c) 24.795 100 2479.5

(d) 0.009 1000 9

(e) $0.014 \times 100 = 1.4$

(f) $473.6 \times 10000 = 47360000$

(g) $2.968 \times 10000 = 29680$

(h) $19.45 \times 100 = 1945$

3. (a) $23.2 \quad 1.96 = \frac{232}{10} \quad \frac{196}{100} \quad \frac{45472}{1000}$ **45.472**

(b) $2.6 \quad 1.8 = \frac{26}{10} \quad \frac{18}{10} \quad \frac{468}{100}$ **4.68**

(c) $18.75 \quad 0.002 = \frac{1875}{100} \quad \frac{2}{1000} \quad \frac{3750}{100000}$ **0.0375**

(d) $9.46 \quad 0.18 = \frac{946}{100} \quad \frac{18}{100} \quad \frac{17028}{10000}$ **1.7028**

(e) $24.65 \quad 17.2 = \frac{2465}{100} \quad \frac{172}{10} \quad \frac{423980}{1000}$ **423.98**

(f) $123.45 \quad 0.007 = \frac{12345}{100} \quad \frac{7}{1000} \quad \frac{86415}{100000}$ **0.86415**

(g) $4.0006 \quad 0.003 = \frac{40006}{10000} \quad \frac{3}{1000} \quad \frac{120018}{10000000}$ **0.0120018**

(h) $45.61 \quad 0.12 = \frac{4561}{100} \quad \frac{12}{100} \quad \frac{54732}{10000}$ **5.4732**

4. You need to just insert the decimal point carefully because the product of 265 and 397 is given as 105205.

(a) $2.765 \quad 3.97 = 10.5205$ (b) $26.5 \quad 0.0397 \quad 1.05205$

(c) $2.65 \quad 0.00397 \quad 0.0105205$ (d) $2.65 \quad 39700 \quad 105205$

5. (a) $1.1 \quad 2.2 \quad 0.2 \quad 0.484$ (b) $1.5 \times 1.5 \times 1.5 = 3.375$

(c) $0.002 \times 0.2 \times 200 = 0.08$ (d) $0.5 \times 5 \times 0.005 \times 500 = 6.25$

6. Cost of 1 m of cloth = ₹ 150.50

Cost of 14.25 m of cloth ₹ 150.50 14.25 = ₹ **2144.625**

Hence, the cost of 14.25 m of cloth is ₹ **2144.625**

7. Sugar in 1 bag = 85.25 kg

Sugar in 29 such bags 29 85.25 = **2472.25 kg**

Hence, the total weight of sugar is 2472.25 kg in 29 such bags.

8. Let, length of the playground = 352.85 m

breadth of the playground = 155.25 m

Area of the playground = (length × breadth)

= 352.85 × 155.25 sq.m.

= 54779.9625 sq.m.

= **54779.963 sq.m.**

9. Wages for a labourer for 1 hour = ₹ 24.60

labourer work for = 6.5 hours

Money earned by the labourer = ₹ 24.60 × 6.5 = ₹ **159.90**

10. Distance covered by Samuel in 1 hour = 50.75 km

distance covered by Samuel in 3.25 hours (3.25 50.75) km

164.9375 km

Exercise 3.2

1. (a) $7.2 \quad 4 = \frac{\cancel{72}}{10} \quad \frac{1}{\cancel{4}} \quad \frac{18}{10} \quad 1.8$ (b) $6.3 \quad 9 = \frac{\cancel{63}}{10} \quad \frac{1}{\cancel{9}} \quad \frac{7}{10} \quad 0.7$

(c) $3.24 \quad 9 = \frac{\cancel{324}}{100} \quad \frac{1}{\cancel{9}} \quad \frac{36}{100} \quad 0.36$ (d) $60.72 \quad 12 = \frac{\cancel{6072}}{100} \quad \frac{1}{\cancel{12}} \quad \frac{506}{100} \quad 5.06$

(e) $58.944 \quad 8 \quad \frac{58944}{1000} \quad \frac{1}{8} \quad \frac{7368}{1000} \quad 7.368$

(f) $85.956 \quad 12 \quad \frac{85956}{1000} \quad \frac{1}{12} \quad \frac{7163}{1000} \quad 7.163$

(g) $82.04 \quad 14 \quad \frac{8204}{100} \quad \frac{1}{14} \quad \frac{586}{100} \quad 5.86$

(h) $77.055 \quad 15 \quad \frac{77055}{1000} \quad \frac{1}{15} \quad \frac{5137}{1000} \quad 5.137$

(i) $3.45 \quad 25 \quad \frac{345}{100} \quad \frac{1}{25} \quad \frac{13.8}{100} \quad \frac{138}{1000} \quad 0.138$

(j) $1.877 \quad 25 \quad \frac{1877}{1000} \quad \frac{1}{25} \quad \frac{75.08}{1000} \quad \frac{7508}{1000 \quad 100} \quad \frac{7508}{100000} \quad 0.07508$

(k) $1302.4 \quad 16 \quad \frac{13024}{10} \quad \frac{1}{16} \quad \frac{814}{10} \quad 81.4$

(l) $1125.3 \quad 11 \quad \frac{11253}{10} \quad \frac{1}{11} \quad \frac{1023}{10} \quad 102.3$

2. (a) $\frac{1423}{100 \quad 10} \quad \frac{1423}{1000} \quad 1.423$

(b) $\frac{2364}{100 \quad 10} \quad 2.364$

(c) $\frac{576}{100 \quad 10} \quad 0.576$

(d) $\frac{347}{1000 \quad 10} \quad \frac{347}{10000} \quad 0.0347$

(e) $\frac{456}{1000 \quad 10} \quad \frac{456}{10000} \quad 0.0456$

(f) $\frac{5}{100 \quad 10} \quad \frac{5}{1000} \quad 0.005$

(g) $\frac{71}{10 \quad 100} \quad \frac{71}{1000} \quad 0.071$

(h) $\frac{23756}{100 \quad 100} \quad \frac{23756}{10000} \quad 2.3756$

3. (a) $\frac{49}{10} \quad \frac{1}{0.7} \quad \frac{49 \quad 10}{10 \quad 7}$ **7**

(b) $\frac{441}{10} \quad \frac{1}{2.1} \quad \frac{441 \quad 10}{10 \quad 21}$ **21**

(c) $\frac{252}{100} \quad \frac{1}{1.2} \quad \frac{\cancel{252} \quad 10}{100 \quad \cancel{12}} \quad \frac{21}{10}$ **2.1**

(d) $\frac{969}{100} \quad \frac{1}{1.9} \quad \frac{969}{100} \quad \frac{10}{19} \quad \frac{51}{10}$ **5.1**

(e) $\frac{1305}{1000} \quad \frac{1}{0.9} \quad \frac{\cancel{1305}}{1000} \quad \frac{10}{\cancel{9}} \quad \frac{145}{100}$ **1.45**

(f) $\frac{25395}{1000} \quad \frac{10}{15} \quad \frac{1693}{100}$ **16.93**

(g) $\frac{20484}{10000} \quad \frac{100}{18} \quad \frac{1138}{100}$ **11.38**

(h) $\frac{\cancel{56192}}{1000} \quad \frac{10}{\cancel{32}} \quad \frac{1756}{100}$ **17.56**

(i) $\frac{\cancel{2366}}{10} \quad \frac{100}{\cancel{26}} \quad 9 \quad 10$ **910**

(j) $\frac{\cancel{625}}{1000} \quad \frac{1000}{\cancel{25}} \quad \frac{25}{1}$ **25**

(k) $\frac{\cancel{1296}}{\cancel{1000}} \quad \frac{\cancel{1000}}{\cancel{108}} \quad \frac{\cancel{108}}{\cancel{9}}$ **12**

(l) $\frac{745}{\cancel{100}} \quad \frac{\cancel{100}}{32} \quad \frac{745}{32}$ **23.28125**

4. Sohail travels in 17 minutes 11.05 km

Sohail travels in 1 minutes $\frac{11.05}{17}$ km

Sohail travels in 19.5 minutes $\frac{11.05}{17} \quad 19.5$

$= \frac{215.475}{17}$ **12.675 km**

5. The cost of 16.5 kg onions = ₹ 255.75

The cost of 1 kg onions = ₹ $\frac{255.75}{16.5}$

The cost of 2 kg onions = ₹ $\frac{255.75}{16.5}$ 2 $\frac{511.5}{16.5}$ **₹ 31**

6. Area of rectangle = 915.9 sq.m.; breadth = ?

length = 35.5 m

breadth $\frac{\text{Area}}{\text{length}}$ $\frac{915.9}{35.5}$ **25.8 m**

7. Perimeter = 260.8 m

Area of the square $\frac{P}{4}^2$ $\frac{P^2}{16}$ $\frac{26.08 \quad 26.08}{16}$

$\frac{68016.64}{16}$ **4251.04 sq.m**

8. Cost of 19 books = ₹ 1206.50

Cost of 1 books = 1206.50 ÷ 19 = ₹ 63.5

Cost of 22 books = ₹ 22 × 63.5 = ₹ 1397

Rashmi should pay (₹ 1397 ₹ 1206.50) **₹ 190.5** more for the books.

9. Cost of 11 *l* of oil = ₹ 940.50

Cost of 1 *l* of oil 940.50 11 = ₹ 85.5

Cost of 15 *l* of oil = ₹ 15 85.5 = ₹ 1282.5

10. 17 shirts are stitched in = 316.25 m of cloth

1 shirts are stitched in $\frac{316.25}{17}$ m of cloth

24 shirts are stitched in 24 $\frac{316.25}{17}$ $\frac{7590}{17}$

446.470 m of cloth

11. Total capacity of the tank = 53.75 *l*

Capacity of 1 jar = 2.15 *l*

Number of jars = 53.75 ÷ 2.15 $\frac{5375}{215}$ **25**

25 jars are required to make empty the full tank.

12. Total length of the ribbon = 52.80 m

Total length of 1 ribbon piece of = 1.65 m

no. of ribbon to be cut from the length of ribbon 52.80 1.65 = $\frac{5280}{165}$ **32 m**

13. Cost of 254.509 *l* of Petrol = ₹ 11452.50

Cost of 1 *l* of petrol = 11452.50 ÷ 254.50

$\frac{1145250}{25450}$ = ₹ 45

Exercise 3.3

1. 2.5 0.5 4 2.5

2.5 0.5 10 (On operating 4 2.5)

5 10 (On operating 2.5 0.5)

15 (On operating 5 10)

2. 1.1 0.1 3.01 0.01

0.11 3.01 0.01 (On operating 1.1 0.1)
3.12 0.01 (On operating 0.11 3.01)
3.11 (On operating 3.11 0.01)

3. 1.4 3.2 + 2 2.1 0.8

4.48 4.2 0.8 (On operating 1.4 × 3.2 and 2 × 2.1)
8.68 0.8 (On operating 4.48 4.2)
7.88 (On operating 8.68 0.8)

4. 14 2 4 0.5 3

14 0.5 0.5 3 (On operating 2 4)
14 0.5 1.5 (On operating 0.5 3)
14.5 1.5 (On operating 14 0.5)
13 (On operating 14.5 1.5)

5. 12 $\frac{1}{2}$ 0.5 $\frac{5}{2}$ 1

12 $\frac{2}{1}$ 0.5 $\frac{5}{2}$ 1 (On operating 12 $\frac{1}{2}$)

24 1.25 1 (On operating 12 2 and 0.5 $\frac{5}{2}$)

25.25 1 24.25

6. 9 2.5 0.5 1

9 5 1 (On operating 2.5 0.5)
14 1 (On operating 9 5)
13 (On operating 14 1)

7. 8.5 1.7 1.2 0.9 of 1.2

8.5 1.7 1.2 1.08 (On operating 8.5 1.7)
5 1.2 1.08 (On operating 5 1.2)
6.2 1.08 (On operating 6.2 1.08)
5.12

8. 2.5 4 25.5 2.5 of 2

2.5 4 25.5 5 (On operating 2.5 4)
10 25.5 5 (On operating 25.5 4)
3.625 (On operating 10 6.375)

9. 13 5.2 0.024 of 8 0.3

13 5.2 0.192 0.3
2.5 0.192 0.3 (On operating 13 5.2)
2.992 (On operating 2.5 + 0.192 + 0.3)

10. 4 3.2 37.8 6.5 of 3

4 32 37.8 19.5
0.125 37.8 19.5 (On operating 4 32)
37.925 19.5 (On operating 0.125 37.8)
18.425 (On operating 37.925 19.5)

MCQ's

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