पुना International School

Shree Swaminarayan Gurukul, Zundal

Class – VII

Sub – Maths

Specimen Copy

Year 2020-21

April month

INDEX

Class –VII Mathematics

(Ex. 1.1) Answers

1. (a) The temperature of the places marked on it is:

Places	Temperature	Places	Temperature
Bangalore	22^oC	Srinagar	-2^oC
Ooty	14^oC	Lahulspiti	-8^oC
Shimla	5^oC		

(b) The temperature of the hottest place Bangalore = 22^oC The temperature of the coldest place Lahulspiti = -8^oC

Difference = $22^oC - (-8^oC) = 22^oC + 8^oC = 30^oC$

(c) The temperature of Srinagar = -2^oC The temperature of Lahulspiti = -8^oC

Difference = $-2^oC + (-8^oC) = -2^oC - 8^oC = 6^oC$

(d) The temperature of Srinagar and Shimla = $5^oC + (-2^oC) = 5^oC - 2^oC = 3^oC$ The temperature at Shimla = 5^oC

Therefore, $3^oC < 5^oC$

Thus, temperature of Srinagar and Shimla taken together is less than the temperature at Shimla.

Now, Temperature of Srinagar = -2^oC Therefore, $3^oC > -2^oC$

No, it is not less than the temperature at Srinagar.

2. Jack's scores in five successive rounds are $25, -5, -10, 15$ and 10.

Total marks got by Jack = $25 + (-5) + (-10) + 15 + 10$

$= 25 - 15 + 25 = 35$

Thus, 35 marks are got by Jack in a quiz.

3. On Monday, temperature at Srinagar = -5^oC On Tuesday, temperature dropped = 2^oC

$\therefore$ Temperature on Tuesday = $-5^oC - 2^oC = -7^oC$ On Wednesday, temperature rose up = 4^oC

$\therefore$ Temperature on Wednesday = $-7^oC + 4^oC = -3^oC$

Thus, temperature on Tuesday and Wednesday was -7^oC and -3^oC respectively.

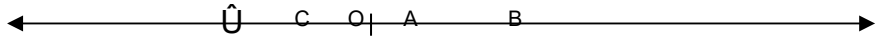
4. Height of a place above the sea level = 5000 m Floating a submarine below the sea level = 1200 m

$\therefore$ The vertical distance between the plane and the submarine = 5000 + 1200 = 6200 m Thus, the vertical distance between the plane and the submarine is 6200 m.

5. Deposit amount = ` 2,000 and Withdrawal amount = ` 1,642

$\therefore$ Balance = 2,000 – 1,642 = ` 358

Thus, the balance in Mohan's account after withdrawal is ` 358.

6. West 

According to the number line, Rita moves towards east is represented by a positive integer. But she moves in opposite direction means Rita moves west, is represented by negative integer.
Distance from A to B = 20 km Distance from B to C = 30 km
Distance from A to C = 20 – 30 = –10 km
Thus, Rital is at final position from A to C is –10 km.

7. (i) Taking rows $5 + (-1) + (-4) = 5 - 5 = 0$
$(-5) + (-2) + 7 = -7 + 7 = 0$
$0 + 3 + (-3) = 3 - 3 = 0$
Taking columns $5 + (-5) + 0 = 5 - 5 = 0$
$(-1) + (-2) + 3 = -3 + 3 = 0$
$(-4) + 7 + (-3) = 7 - 7 = 0$
Taking diagonals $5 + (-2) + (-3) = 5 - 5 = 0$
$(-4) + (-2) + 0 = -6$
This box is not a magic square because all the sums are not equal.

(ii) Taking rows $1 + (-10) + 0 = 1 - 10 = -9$
$(-4) + (-3) + (-2) = -7 - 2 = -9$
$(-6) + 4 + (-7) = -2 - 7 = -9$
Taking columns $1 + (-4) + (-6) = 1 - 10 = -9$
$(-10) + (-3) + 4 = -13 + 4 = -9$
$0 + (-2) + (-7) = 0 - 9 = -9$
Taking diagonals $1 + (-3) + (-7) = 1 - 10 = -9$
$0 + (-3) + (-6) = -9$
This box is magic square because all the sums are equal.

8. (i) Given: $a = 21, b = 18$
We have $a - (-b) = a + b$

Putting the values in L.H.S. = $a - (-b) = 21 - (-18) = 21 + 18 = 39$
Putting the values in R.H.S. = $a + b = 21 + 19 = 39$
Since, L.H.S.= R.H.S Hence, verified.

(ii) Given: $a = 118, b = 125$
We have $a - (-b) = a + b$

Putting the values in L.H.S. = $a - (-b) = 118 - (-125) = 118 + 125 = 243$
Putting the values in R.H.S. = $a + b = 118 + 125 = 243$
Since, L.H.S.= R.H.S Hence, verified.

(iii) Given: $a = 75, b = 84$

We have $a-(-b)=a+b$

Putting the values in L.H.S. = $a-(-b)=75-(-84)$ = 75 + 84 = 159

Putting the values in R.H.S. = $a+b$ = 75 + 84 = 159

Since, L.H.S.= R.H.S Hence, verified.

(iv) Given: $a=28, b=11$

We have $a-(-b)=a+b$

Putting the values in L.H.S. = $a-(-b)=28-(-11)$ = 28 + 11 = 39

Putting the values in R.H.S. = $a+b$ = 28 + 11 = 39

Since, L.H.S.= R.H.S Hence, verified.

9. (a) $(-8)+(-4)\square(-8)-(-4) \Rightarrow -8-4\square-8+4$

$\Rightarrow -12\square-4 \Rightarrow -12<-4$

(b) $(-3)+7-(19)\square15-8+(-9) \Rightarrow -3+7-19\square15-8-9$

$\Rightarrow 4-19\ \square\ 15-17 \Rightarrow -15\ \square\ -2$

$\Rightarrow -15<-2$

(c) $23-41+11\square23-41-11 \Rightarrow -18+11\square23-52$

$\Rightarrow -7\ \square\ -29 \Rightarrow -7\ >\ -29$

(d) $39+(-24)-(15)\square36+(-52)-(-36) \Rightarrow 39-24-15\ \square\ 36-52+36$

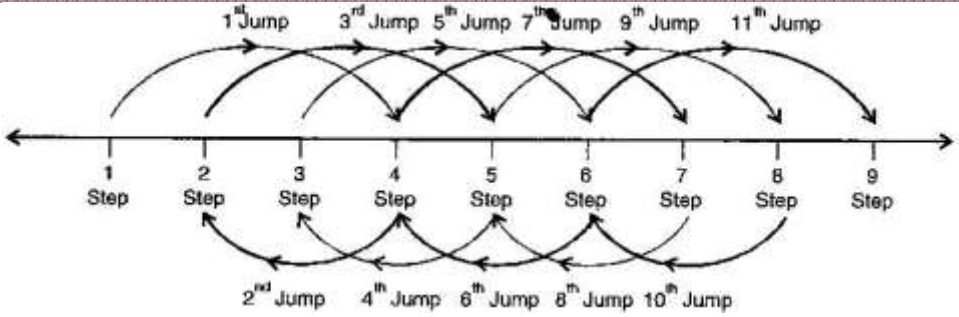
$\Rightarrow 39-39\ \square\ 72-52 \Rightarrow 0\ \square\ 20$

$\Rightarrow 0<20$

(e) $(-231)+79+51\ \square(-399)+159+81 \Rightarrow -231+130\square-399+240$

$\Rightarrow -101\square-159 \Rightarrow -101\ >\ -159$

10. (i) He jumps 3 steps down and jumps back 2 steps up. Following number ray shows the jumps of monkey:



First jump = 1 + 3 = 4 steps

Second jump = 4 – 2 = 2 steps

Third jump = 2 + 3 = 5 steps

Fourth jump = 5 – 2 = 3 steps

Fifth jump = 3 + 3 = 6 steps

Sixth jump = 6 – 2 = 4 steps

Seventh jump = 4 + 3 = 7 steps

Eighth jump = 7 – 2 = 5 steps

Ninth jump = 5 + 3 = 8 steps

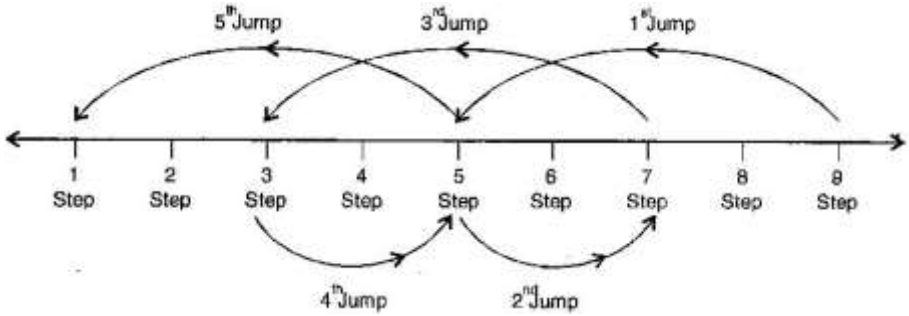
Tenth jump = 8 – 2 = 6 steps

Eleventh jump = 6 + 3 = 9 steps

He will reach ninth steps in 11 jumps.

(ii) He jumps four steps and them jumps down 2 steps. Following number ray shows the jumps of monkey:

Thus monkey reach back on the first step in fifth jump. (iii) (a) $-3+2-3+2-3+2-3+$



$2-3+2-3+2-3+2-3+2=-8$

(b) $4-2+4-2+4-2+4-2=8$

Thus, sum 8 in (b) represents going up by eight steps.

Class –VII Mathematics

(Ex. 1.2) Answers

1. (a) One such pair whose sum is -7 : $-5+(-2)=-7$

   (b) One such pair whose difference is -10 : $-2-8=-10$

   $-5+5=0$

   (c) One such pair whose sum is

0: 2. (a) $-2-(-10)-2+10=8$

(b) $(-7)+2=-5$

(c) $(-2)\ -1=-2-1=-3$

3. Team A scored $-40,10,0$

Total score of Team A = $-40+10+0=-30$

Team B scored $10,\ 0,\ -40$

Total score of Team B = $10+0+(-40)=10+0-40=-30$

Thus, scores of both teams are same.

Yes, we can add integers in any order due to commutative property.

4. (i) $(-5)+(-8)=(-8)+(-5)$ [Commutative property]

   (ii) $-53+\underline{0}=-53$ [Zero additive property]

   (iii) $17+(-17)=0$ (Additive identity]

   (iv) $[13+(12)]+(-7)=13+[(-12)+(-7)]$ [Associative property]

   (v) $(-4)+[15+(-3)]=[-4+15]+\overline{(-3)}$ [Associative property]

Class –VII Mathematics

(Ex. 1.3) Answers

1. (a) 3 x (–1) = –3
(b) (–1) x 225 = –225
(c) (–21) x (–30) = 630
(d) (–316) x (–1) = 316
(e) (–15) x 0 x (–18) = 0
(f) (–12) x (–11) x (10) = 132 x 10 = 1320
(g) 9 x (–3) x (–6) = 9 x 18 = 162
(h) (–18) x (–5) x (–4) = 90 x (–4) = –360
(i) (–1) x (–2) x (–3) x 4 = (–6 x 4) = –24
(j) (–3) x (–6) x (2) x (–1) = (–18) x (–2) = 36

2. (a) 18 x [7 + (–3)] = [18 x 7] + [18 x (–3)]
⇒ 18 x 4 = 126 + (–54)
⇒ 72 = 72
⇒ L.H.S. = R.H.S. Hence verified.

(b) (–21) x [(–4) + (–6)] = [(–21) x (–4)] + [(–21) x (–6)]
⇒ (–21) x (–10) = 84 + 126
⇒ 210 = 210
⇒ L.H.S. = R.H.S. Hence verified.

3. (i) $(-1)\times a = -a$, where a is an integer.

(ii) (a) $(-1)\times(-22)=22$ (b) $(-1)\times 37 = -37$

(c) $(-1)\times 0 = 0$

4. $(-1)\times 5=-5$ $(-1)\times 4=-4$

$(-1)\times 3=-3$ $(-1)\times 2=-2$

$(-1)\times 1=-1$ $(-1)\times 0 = 0$

$(-1)\times(-1) = 1$

Thus, we can conclude that this pattern shows the product of one negative integer and one positive integer is negative integer whereas the product of two negative integers is a positive integer.

5. (a) $26\times(-48)+(-48)\times(-36)$

$\Rightarrow (-48)\times[26+(-36)]$ [Distributive property]

$\Rightarrow (-48)\times(-10)$

$\Rightarrow$ 480

(b) $8\times 53\times(-125)$

$\Rightarrow \quad 53\times\left[8\times(-125)\right]$ [Commutative property]

$\Rightarrow \quad 53\times(-1000)$

$\Rightarrow \quad -53000$

(c) $15\times(-25)\times(-4)\times(-10)$

$\Rightarrow \quad 15\times\left[(-25)\times(-4)\times(-10)\right]$ [Commutative property]

$\Rightarrow \quad 15\times(-1000)$

$\Rightarrow \quad -15000$

(d) $(-41)\times(102)$

$\Rightarrow \quad -41\times\left[100+2\right]$ [Distributive property]

$\Rightarrow \quad \left[(-41)\times 100\right]+\left[(-41)\times 2\right] \quad \Rightarrow \quad -4100+(-82)$

$\Rightarrow \quad -4182$

(e) $625\times(-35)+(-625)\times 65$

$\Rightarrow \quad 625\times\left[(-35)+(-65)\right]$ [Distributive property]

$\Rightarrow \quad 625\times(-100)$

$\Rightarrow \quad -62500$

(f) $7\times(50-2)$

$\Rightarrow \quad 7\times 50-7\times 2$ [Distributive property]

$\Rightarrow \quad 350-14=336$

(g) $(-17)\times(-29) \quad \Rightarrow \quad (-17)\times\left[(-30)+1\right]$ [Distributive property]

$\Rightarrow \quad (-17)\times(30)+(-17)\times 1 \quad \Rightarrow \quad 510+(-17)$

$\Rightarrow \quad 493$

(h) $(-57)\times(-19)+57$

$\Rightarrow \quad (-57)\times(-19)+57\times 1 \quad \Rightarrow \quad 57 \text{ x } 19 + 57 \text{ x } 1$

$\Rightarrow \quad 57 \text{ x } (19 + 1)$ [Distributive property]

$\Rightarrow \quad 57 \text{ x } 20 = 1140$

6. Given: Present room temperature = 40°C
Decreasing the temperature every hour = 5°C

Room temperature after 10 hours = $40^{o}C + 10 \text{ x } (-5^{o}C)$

$= 40^{o}C - 50^{o}C$

$= -10^{o}C$

Thus, the room temperature after 10 hours is $-10^{o}C$ after the process begins.

7. (i) Mohan gets marks for four correct questions = 4 x 5 = 20

He gets marks for six incorrect questions = 6 x (–2) = –12 Therefore, total scores of Mohan = (4 x 5) + [6 x (–2)]

= 20 – 12 = 8

Thus, Mohan gets 8 marks in a class test.

(ii) Reshma gets marks for five correct questions = 5 x 5 = 25 She gets marks for five incorrect questions = 5 x (–2) = –10 Therefore, total score of Resham = 25 + (–10) = 15

Thus, Reshma gets 15 marks in a class test.

(iii) Heena gets marks for two correct questions = 2 x 5 = 10 She gets marks for five incorrect questions = 5 x (–2) = –10 Therefore, total score of Resham = 10 + (–10) = 0

Thus, Reshma gets 0 marks in a class test.

8. Given: Profit of 1 bag of white cement = ` 8 And Loss of 1 bag of grey cement = ` 5

(a) Profit on selling 3000 bags of white cement = 3000 x 8 = ` 24,000 Loss of selling 5000 bags of grey cement = 5000 x ` 5 = ` 25,000 Since Profit < Loss

Therefore, his total loss on selling the grey cement bags = Loss – Profit

= 25,000 – 24,000

= ` 1,000

Thus, he has lost of ` 1,000 on selling the grey cement bags.

(b) Let the number of bags of white cement be x.

According to question, Loss = Profit

$\therefore$ 5 x 6,400 = x x 8

$\Rightarrow \quad x = \frac{5 \times 6400}{8}$ = 5000 bags

Thus, he must sell 4000 white cement bags to have neither profit nor loss.

9. (a) $(-3) \times (-9) = 27$

(b) $5 \times (-7) = -35$

(c) $7 \times (-8) = -56$

(d) $(-11) \times (-12) = 132$

Class –VII Mathematics

(Ex. 1.4)

Answers

1. (a) $(-30) \div 10 = (-30) \times \frac{1}{10} = \frac{-30 \times 1}{10} = -3$

(b) $50 \div (-5) = 50 \times \left(\frac{-1}{5}\right) = \frac{50 \times (-1)}{5} = -10$

(c) $(-36) \div (-9) = (-36) \times \left(\frac{-1}{9}\right) = \frac{(-36) \times (-1)}{9} = \frac{36}{9} = 4$

(d) $(-49) \div 49 = (-49) \times \frac{1}{49} = \frac{-49}{49} = -1$

(e) $13 \div [(-2) + 1] = 13 \div (-1) = 13 \times \left(\frac{-1}{1}\right) = -13$

(f) $0 \div (-12) = 0 \times \left(\frac{-1}{12}\right) = \frac{0}{12} = 0$

(g) $(-31) \div [(-30) \div (-1)] = (-31) \div (-30 - 1) = (-31) \div (-31) = (-31) \times \left(\frac{-1}{31}\right) = \frac{31}{31} = 1$

(h) $[(-36) \div 12] \div 3 = \left[(-36) \times \frac{1}{12}\right] \times \frac{1}{3} = \left(\frac{-36}{12}\right) \times \frac{1}{3} = (-3) \times \frac{1}{3} = \frac{-3}{3} = -1$

(i) $[(-6) + 5] \div [(-2) + 1] = (-6 + 5) \div (-2 + 1) = (-1) \div (-1) = (-1) \times \frac{(-1)}{1} = 1$

2. (a) Given:

$$a \div (b + c) \neq (a \div b) + (a \div c)$$

$$a = 12, b = -4, c = 2$$

Putting the given values in L.H.S. $= 12 \div (-4 + 2)$

$$= 12 \div (-2) = 12 \div \left(\frac{-1}{2}\right) = \frac{-12}{2} = -6$$

Putting the given values in R.H.S. $= [12 \div (-4)] + (12 \div 2)$

$$= \left[12 \times \frac{-1}{4}\right] + 6 = -3 + 6 = 3$$

Since, L.H.S. ≠ R.H.S.

Hence verified.

(b) Given:

$$a \div (b + c) \neq (a \div b) + (a \div c)$$

$$a = -10, b = 1, c = 1$$

Putting the given values in L.H.S. $= -10 \div (1 + 1)$

$$= -10 \div (2) = -5$$

Putting the given values in R.H.S. = $\left[-10 \div 1\right] + \left(-10 \div 1\right)$

$= -10 - 10 = -20$

Since, L.H.S. $\neq$ R.H.S.

Hence verified.

3. (a) $369 \div 1 = 369$

(b) $(-75) \div \underline{75} = (-1)$

(c) $(-206) \div \underline{(-206)} = 1$

(d) $(-87) \div (-1) = 87$

(e) $\underline{(-87)} \div 1 = -87$

(f) $(-48) \div \overline{48} = -1$

(g) $20 \div \underline{(-10)} = -2$

(h) $\overline{(-12)} \div (4) = -3$

4. (i) $(-6) \div 2 = -3$

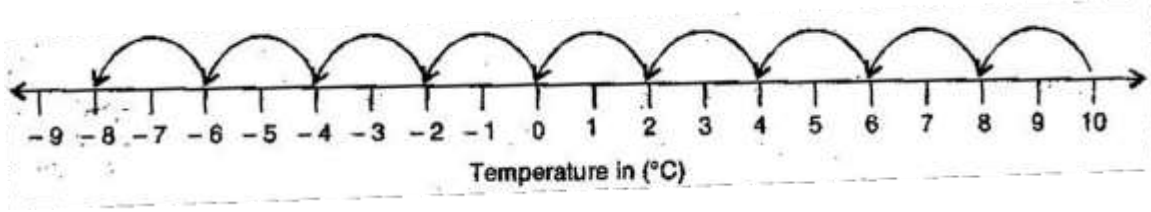
(ii) $9 \div (-3) = -3$

(iii) $12 \div (-4) = -3$

(iv) $(-9) \div 3 = -3$

(v) $(-15) \div 5 = -3$

5. Following number line is representing the temperature:



The temperature decreases $2^{o}C$ = 1 hour

The temperature decreases $1^{o}C = \frac{1}{2}$ hour

The temperature decreases $18^{o}C = \frac{1}{2} \times 18$ = 9 hours

Total time = 12 noon + 9 hours = 21 hours = 9 pm Thus, at 9 pm the temperature would be $8^{o}C$ below $0^{o}C$.

6. (i) Marks given for one correct answer = 3

Marks given for 12 correct answers = 3 x 12 = 36 Radhika scored 20 marks.

Therefore, Marks obtained for incorrect answers = 20 – 36 = –16 Now, marks given for one incorrect answer = –2

Therefore, number of incorrect answers = $(-16) \div (-2) = 8$

Thus, Radhika has attempted 8 incorrect questions.

(ii) Marks given for seven correct answers = 3 x 7 = 21 Mohini scores = –5

Marks obtained for incorrect answers = = –5 – 21 = –26 Now, marks given for one incorrect answer = –2 Therefore, number of incorrect answers = $\left(-26\right) \div \left(-2\right) = 13$

Thus, Mohini has attempted 13 incorrect questions.

7. Starting position of mine shaft is 10 m above the ground but it moves in opposite direction so it travels the distance (–350) m below the ground.

So total distance covered by mine shaft = 10 m – (–350) m = 10 + 350 = 360 m Now, time taken to cover a distance of 6 m by it = 1 minute

So, time taken to cover a distance of 1 m by it = $\frac{1}{6}$ minute

Therefore, time taken to cover a distance of 360 m = $\frac{1}{6} \times 360$ = 60 minutes = 1 hour

(Since 60 minutes = 1 hour)

Thus, in one hour the mine shaft reaches –350 below the ground.

NCERT Solutions for Class 7 Maths Chapter 2

Fractions and Decimals Class 7

Chapter 2 Fractions and Decimals Exercise 2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 2.7 Solutions

Exercise 2.1 : Solutions of Questions on Page Number : **31**

Q1 :

Solve:

(i) $2-\frac{3}{5}$ (ii) $4+\frac{7}{8}$ (iii) $\frac{3}{5}+\frac{2}{7}$

(iv) $\frac{9}{11}-\frac{4}{15}$ (v) $\frac{7}{10}+\frac{2}{5}+\frac{3}{2}$ (vi) $2\frac{2}{3}+3\frac{1}{2}$

(vii) $8\frac{1}{2}-3\frac{5}{8}$

Answer :

(i) $2-\frac{3}{5}=\frac{2\times5}{5}-\frac{3}{5}=\frac{10-3}{5}=\frac{7}{5}$

(ii) $4+\frac{7}{8}=\frac{4\times8}{8}+\frac{7}{8}=\frac{(4\times8)+7}{8}=\frac{39}{8}=4\frac{7}{8}$

(iii) $\frac{3}{5}+\frac{2}{7}=\frac{3\times7}{5\times7}+\frac{2\times5}{7\times5}=\frac{21+10}{35}=\frac{31}{35}$

(iv) $\frac{9}{11}-\frac{4}{15}=\frac{9\times15}{11\times15}-\frac{4\times11}{15\times11}=\frac{135-44}{165}=\frac{91}{165}$

(v) $\frac{7}{10}+\frac{2}{5}+\frac{3}{2}=\frac{7}{10}+\frac{2\times2}{5\times2}+\frac{3\times5}{2\times5}=\frac{7+4+15}{10}=\frac{26}{10}=\frac{13}{5}=2\frac{3}{5}$

(vi) $2\frac{2}{3}+3\frac{1}{2}=\frac{8}{3}+\frac{7}{2}=\frac{8\times2}{3\times2}+\frac{7\times3}{2\times3}=\frac{16+21}{6}=\frac{37}{6}=6\frac{1}{6}$

(vii) $8\frac{1}{2}-3\frac{5}{8}=\frac{17}{2}-\frac{29}{8}=\frac{17\times4}{2\times4}-\frac{29}{8}=\frac{68-29}{8}=\frac{39}{8}=4\frac{7}{8}$

Q2 :

Arrange the following in descending order:

(i) $\frac{2}{9}, \frac{2}{3}, \frac{8}{21}$ (ii) $\frac{1}{5}, \frac{3}{7}, \frac{7}{10}$

Answer :

(i) $\frac{2}{9}, \frac{2}{3}, \frac{8}{21}$

Changing them to like fractions, we obtain

$$\frac{2}{9}=\frac{2\times 7}{9\times 7}=\frac{14}{63}$$
$$\frac{2}{3}=\frac{2\times 21}{3\times 21}=\frac{42}{63}$$
$$\frac{8}{21}=\frac{8\times 3}{21\times 3}=\frac{24}{63}$$

Since 42>24>14,

$$\therefore \frac{2}{3}>\frac{8}{21}>\frac{2}{9}$$

(ii) $\frac{1}{5}, \frac{3}{7}, \frac{7}{10}$

Changing them to like fractions, we obtain

$$\frac{1}{5}=\frac{1\times 14}{5\times 14}=\frac{14}{70}$$
$$\frac{3}{7}=\frac{3\times 10}{7\times 10}=\frac{30}{70}$$
$$\frac{7}{10}=\frac{7\times 7}{10\times 7}=\frac{49}{70}$$

As 49 > 30>14,

$$\therefore \frac{7}{10}>\frac{3}{7}>\frac{1}{5}$$

Q3 :

In a "magic square", the sum of the numbers in each row, in each column and along the diagonal is the same. Is this a magic square?

$\frac{4}{11}$	$\frac{9}{11}$	$\frac{2}{11}$	(Along the first row $\frac{4}{11}+\frac{9}{11}+\frac{2}{11}=\frac{15}{11}$)

$\frac{3}{11}$	$\frac{5}{11}$	$\frac{7}{11}$	
$\frac{8}{11}$	$\frac{1}{11}$	$\frac{6}{11}$	

Answer :

Along the first row, sum = $\frac{4}{11}+\frac{9}{11}+\frac{2}{11}=\frac{15}{11}$

Along the second row, sum = $\frac{3}{11}+\frac{5}{11}+\frac{7}{11}=\frac{15}{11}$

Along the third row, sum = $\frac{8}{11}+\frac{1}{11}+\frac{6}{11}=\frac{15}{11}$

Along the first column, sum = $\frac{4}{11}+\frac{3}{11}+\frac{8}{11}=\frac{15}{11}$

Along the second column, sum = $\frac{9}{11}+\frac{5}{11}+\frac{1}{11}=\frac{15}{11}$

Along the third column, sum = $\frac{2}{11}+\frac{7}{11}+\frac{6}{11}=\frac{15}{11}$

Along the first diagonal, sum = $\frac{4}{11}+\frac{5}{11}+\frac{6}{11}=\frac{15}{11}$

Along the second diagonal, sum = $\frac{2}{11}+\frac{5}{11}+\frac{8}{11}=\frac{15}{11}$

Since the sum of the numbers in each row, in each column, and along the diagonals is the same, it is a magic square.

Q4 :

A rectangular sheet of paper is $12\frac{1}{2}$ cm long and $10\frac{2}{3}$ cm wide. Find its perimeter.

Answer :

Length = $12\frac{1}{2}\text{ cm} = \frac{25}{2}\text{ cm}$

Breadth = $10\frac{2}{3}\text{ cm} = \frac{32}{3}\text{ cm}$

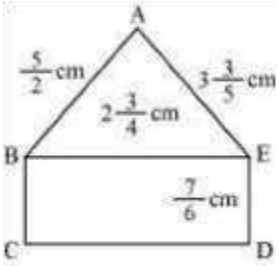
Perimeter = 2 × (Length + Breadth)

$$= 2\times\left[\frac{25}{2}+\frac{32}{3}\right] = 2\times\left[\frac{(25\times3)+(32\times2)}{6}\right] = 2\times\left[\frac{75+64}{6}\right]$$

$$= 2\times\frac{139}{6} = \frac{139}{3} = 46\frac{1}{3}\text{cm}$$

Q5 :

Find the perimeters of (i) ΔABE (ii) the rectangle BCDE in this figure. Whose perimeter is greater?



Answer :

(i) Perimeter of ΔABE = AB + BE + EA

$$= \left(\frac{5}{2}+2\frac{3}{4}+3\frac{3}{5}\right) = \left(\frac{5}{2}+\frac{11}{4}+\frac{18}{5}\right)$$
$$= \left(\frac{5\times10}{2\times10}+\frac{11\times5}{4\times5}+\frac{18\times4}{5\times4}\right)$$
$$= \frac{50+55+72}{20} = \frac{177}{20} = 8\frac{17}{20}\text{cm}$$ (ii)

$$\therefore \frac{177}{20} > \frac{43}{6}$$

Perimeter (ΔABE) > Perimeter (BCDE)

Q6 :

Salil wants to put a picture in a frame. The $7\frac{3}{5}$ **picture is cm wide.**

To fit in the frame the picture cannot be more $7\frac{3}{10}$ **than cm wide. How much should the picture be trimmed?**

As 531 > 430,

Perimeter of rectangle = 2 (Length + Breadth)

$$\text{Perimeter of rectangle} = 2\left[\frac{11}{4}+\frac{7}{6}\right]$$
$$= 2\left[\frac{11\times3}{4\times3}+\frac{7\times2}{6\times2}\right] = 2\left[\frac{33+14}{12}\right]$$
$$= 2\times\frac{47}{12} = \frac{47}{6} = 7\frac{5}{6}\text{cm}$$

Perimeter of ΔABE = $\frac{177}{20}$ cm

Changing them to like fractions, we obtain

$$\frac{177}{20} = \frac{177\times3}{20\times3} = \frac{531}{60}$$
$$\frac{43}{6} = \frac{43\times10}{6\times10} = \frac{430}{60}$$

Answer :

Width of picture = $7\frac{3}{5} = \frac{38}{5}$ cm

Required width = $7\frac{3}{10} = \frac{73}{10}$ cm

The picture should be trimmed by $= \left(\frac{38}{5} - \frac{73}{10}\right)$

$= \left(\frac{38 \times 2}{5 \times 2} - \frac{73}{10}\right) = \frac{76 - 73}{10} = \frac{3}{10}$ cm

Q7 :

Ritu ate $\frac{3}{5}$ part of an apple and the remaining apple was eaten by her brother Somu. How much part of the apple did Somu eat? Who had the larger share? By how much?

Answer :

Part of apple eaten by Ritu = $\frac{3}{5}$

Part of apple eaten by Somu = 1 - Part of apple eaten by Ritu

= $1 - \frac{3}{5} = \frac{2}{5}$

Therefore, Somu ate $\frac{2}{5}$ part of the apple.

Since 3 > 2, Ritu had the larger share.

Difference between the 2 shares = $\frac{3}{5} - \frac{2}{5} = \frac{1}{5}$

Therefore, Ritu's share is larger than the share of Somu by $\frac{1}{5}$.

Q8 :

Michael finished colouring a picture in $\frac{7}{12}$ hour. Vaibhav finished colouring the same picture in $\frac{3}{4}$ hour. Who worked longer? By what fraction was it longer?

Answer :

Time taken by Michael = $\frac{7}{12}$ hr

Time taken by Vaibhav = $\frac{3}{4}$ hr

Converting these fractions into like fractions, we obtain

$$\frac{3}{4}=\frac{3\times3}{4\times3}=\frac{9}{12}$$

$$\text{And},\frac{7}{12}$$

Since 9 > 7,

Vaibhav worked longer.

Difference = $\frac{9}{12}-\frac{7}{12}=\frac{2}{12}=\frac{1}{6}$ hour

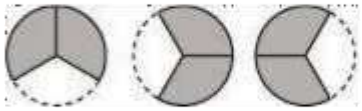
Exercise 2.2 : Solutions of Questions on Page Number : **36**

Q1 :

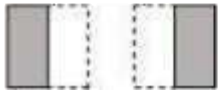
Which of the drawings (a) to (d) show:

(i) $2\times\frac{1}{5}$ (ii) $2\times\frac{1}{2}$ (iii) $3\times\frac{2}{3}$ (iv) $3\times\frac{1}{4}$

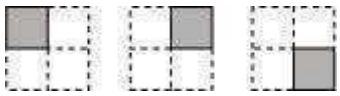
(a)



(b)

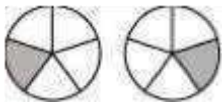


(c)



represents addition of 2 figures, each representing 1 shaded part out of 5 equal parts. Hence, $2\times\frac{1}{5}$

(d)



represents addition of 2 figures, each representing 1 shaded part out of 2 equal parts. Hence, $2\times\frac{1}{2}$

$3\times\frac{2}{3}$

Answer :

(i) $2\times\frac{1}{5}$ is represented by (d).

(ii) $2\times\frac{1}{2}$ is represented by (b).

(iii) $3\times\frac{1}{4}$ is represented by (a).

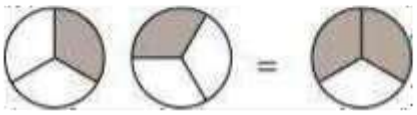
(iv) represents addition of 3 figures, each representing 2 shaded parts out of 3 equal parts. Hence, $3\times\frac{1}{4}$ is represented by (c).

Q2 :

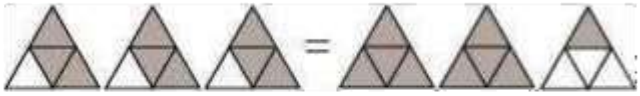
Some pictures (a) to (c) are given below. Tell which of them show:

(i) $3\times\frac{1}{5}=\frac{3}{5}$ (ii) $2\times\frac{1}{3}=\frac{2}{3}$ (iii) $3\times\frac{3}{4}=2\frac{1}{4}$

(a)



(b)



(c)

Answer :

(i) $3\times\frac{1}{5}$ represents the addition of 3 figures, each representing 1 shaded part out of 5 equal parts and $\frac{3}{5}$ represents 3 shaded parts out of 5 equal parts. Hence, $3\times\frac{1}{5}=\frac{3}{5}$ is represented by (c).

(ii) $2\times\frac{1}{3}$ represents the addition of 2 figures, each representing 1 shaded part out of 3 equal parts and $\frac{2}{3}$ represents 2 shaded parts out of 3 equal parts. Hence, $2\times\frac{1}{3}=\frac{2}{3}$ is represented by (a).

(iii) $3\times\frac{3}{4}$ represents the addition of 3 figures, each representing 3 shaded parts out of 4 equal parts and represents 2 fully shaded figures and one figure having 1 part as shaded out of 4 equal parts. Hence, $2\frac{1}{4}$ is represented by (b) $3\times\frac{3}{4}=2\frac{1}{4}$

Q3 :

Multiply and reduce to lowest form and convert into a mixed fraction:

(i) $7\times\frac{3}{5}$ (ii) $4\times\frac{1}{3}$ (iii) $2\times\frac{6}{7}$ (iv) $5\times\frac{2}{9}$

(v) $\frac{2}{3}\times 4$ (vi) $\frac{5}{2}\times 6$ (vii) $11\times\frac{4}{7}$ (viii) $20\times\frac{4}{5}$

(ix) $13\times\frac{1}{3}$ (x) $15\times\frac{3}{5}$

Answer :

(i) $7\times\frac{3}{5}=\frac{21}{5}=4\frac{1}{5}$

(ii) $4\times\frac{1}{3}=\frac{4}{3}=1\frac{1}{3}$

(iii) $2\times\frac{6}{7}=\frac{12}{7}=1\frac{5}{7}$

(iv) $5\times\frac{2}{9}=\frac{10}{9}=1\frac{1}{9}$

(v) $\frac{2}{3}\times 4=\frac{8}{3}=2\frac{2}{3}$

(vi) $\frac{5}{2}\times 6=15$

(vii) $11 \times \frac{4}{7} = \frac{44}{7} = 6\frac{2}{7}$

(viii) $20 \times \frac{4}{5} = 16$

(ix) $13 \times \frac{1}{3} = \frac{13}{3} = 4\frac{1}{3}$

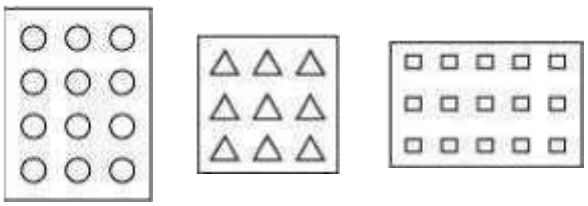
(x) $15 \times \frac{3}{5} = 9$

Q4 :

Shade:

$\frac{1}{2}$ **(i)** $\frac{3}{5}$ **of the circles in box (a) (ii)** $\frac{2}{3}$ **of the triangles in box (b)**

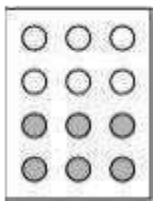
(iii) of the squares in box (c)



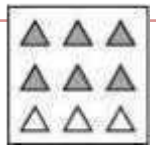
(a) (b) (c)

Answer :

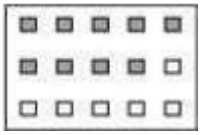
(i) It can be observed that there are 12 circles in the given box. We have to shade $\frac{1}{2}$ of the circles in it. As $12 \times \frac{1}{2} = 6$, therefore, we will shade any 6 circles of it.



(ii) It can be observed that there are 9 triangles in the given box. We have to shade $\frac{2}{3}$ of the triangles in it. As $9 \times \frac{2}{3} = 6$, therefore, we will shade any 6 triangles of it.



(iii) It can be observed that there are 15 squares in the given box. We have to shade $\frac{3}{5}$ of the squares in it. As $\frac{3}{5} \times 15 = 9$, therefore, we will shade any 9 squares of it.



Q5 :

of (i) 24 (ii) 46

of (i) 18 (ii) 27

of (i) 16 (ii) 36

of (i) 20 (ii) 35

Find:

$\frac{1}{2}$ (a)

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

$\frac{3}{4}$ (c)

$\frac{4}{5}$ (d)

Answer :

(a) (i) $\frac{1}{2} \times 24 = 12$

(ii) $\frac{1}{2} \times 46 = 23$

(b) (i) $\frac{2}{3} \times 18 = 12$

(ii) $\frac{2}{3} \times 27 = 18$

(c) (i) $\frac{3}{4} \times 16 = 12$

(ii) $\frac{3}{4} \times 36 = 27$

(d) (i) $\frac{4}{5} \times 20 = 16$

(ii) $\frac{4}{5} \times 35 = 28$

Q6 :

Multiply and express as a mixed fraction:

(a) $3\times5\frac{1}{5}$ (b) $5\times6\frac{3}{4}$

(c) $7\times2\frac{1}{4}$ (d) $4\times6\frac{1}{3}$

(e) $3\frac{1}{4}\times6$ (f) $3\frac{2}{5}\times8$

Answer :

(a) $3\times5\frac{1}{5}=3\times\frac{26}{5}=\frac{78}{5}=15\frac{3}{5}$

(b) $5\times6\frac{3}{4}=5\times\frac{27}{4}=\frac{135}{4}=33\frac{3}{4}$

(c) $7\times2\frac{1}{4}=7\times\frac{9}{4}=\frac{63}{4}=15\frac{3}{4}$

(d) $4\times6\frac{1}{3}=4\times\frac{19}{3}=\frac{76}{3}=25\frac{1}{3}$

(e) $3\frac{1}{4}\times6=\frac{13}{4}\times6=\frac{78}{4}=\frac{39}{2}=19\frac{1}{2}$

(f) $3\frac{2}{5}\times8=\frac{17}{5}\times8=\frac{136}{5}=27\frac{1}{5}$

Q7 :

Find (a) $\frac{1}{2}$ **of (i)** $2\frac{3}{4}$ **(ii)** $4\frac{2}{9}$ **(b)** $\frac{5}{8}$ **of (i)** $3\frac{5}{6}$ **(ii)** $9\frac{2}{3}$

Answer :

(a) (i) $\frac{1}{2}\times2\frac{3}{4}=\frac{1}{2}\times\frac{11}{4}=\frac{11}{8}=1\frac{3}{8}$

(ii) $\frac{1}{2}\times4\frac{2}{9}=\frac{1}{2}\times\frac{38}{9}=\frac{19}{9}=2\frac{1}{9}$

(b) (i) $\frac{5}{8}\times3\frac{5}{6}=\frac{5}{8}\times\frac{23}{6}=\frac{115}{48}=2\frac{19}{48}$

(ii) $\frac{5}{8}\times9\frac{2}{3}=\frac{5}{8}\times\frac{29}{3}=\frac{145}{24}=6\frac{1}{24}$

Q8 :

Vidya and Pratap went for a picnic. Their mother gave them a water bottle that contained 5 litres of water. Vidya consumed $\frac{2}{5}$ of the water. Pratap consumed the remaining water.

(i) How much water did Vidya drink?

(ii) What fraction of the total quantity of water did Pratap drink?

Answer :

(i) Water consumed by Vidya = $\frac{2}{5}$ of 5 litres

$$= \frac{2}{5} \times 5 = 2 \text{ litres}$$

(ii) Water consumed by Pratap = $1 - \frac{2}{5} = \frac{3}{5}$ of the total water

Exercise 2.3 : Solutions of Questions on Page Number : **41**

Q1 :

Find:

(i) $\frac{1}{4}$ of (a) $\frac{1}{4}$ (b) $\frac{3}{5}$ (c) $\frac{4}{3}$

(ii) $\frac{1}{7}$ of (a) $\frac{2}{9}$ (b) $\frac{6}{5}$ (c) $\frac{3}{10}$

Answer :

(i) (a) $\frac{1}{4} \times \frac{1}{4} = \frac{1}{16}$

(b) $\frac{1}{4} \times \frac{3}{5} = \frac{3}{20}$

(c) $\frac{1}{4} \times \frac{4}{3} = \frac{1}{3}$

(ii) (a) $\frac{1}{7} \times \frac{2}{9} = \frac{2}{63}$

(b) $\frac{1}{7} \times \frac{6}{5} = \frac{6}{35}$

(c) $\frac{1}{7} \times \frac{3}{10} = \frac{3}{70}$

Q2 :

Multiply and reduce to lowest form (if possible):

(i) $\frac{2}{3} \times 2\frac{2}{3}$ (ii) $\frac{2}{7} \times \frac{7}{9}$ (iii) $\frac{3}{8} \times \frac{6}{4}$

(iv) $\frac{9}{5} \times \frac{3}{5}$ (v) $\frac{1}{3} \times \frac{15}{8}$ (vi) $\frac{11}{2} \times \frac{3}{10}$

(vii) $\frac{4}{5} \times \frac{12}{7}$

Answer :

(i) $\frac{2}{3} \times 2\frac{2}{3} = \frac{2}{3} \times \frac{8}{3} = \frac{16}{9} = 1\frac{7}{9}$

(ii) $\frac{2}{7} \times \frac{7}{9} = \frac{2}{9}$

(iii) $\frac{3}{8} \times \frac{6}{4} = \frac{9}{16}$

(iv) $\frac{9}{5} \times \frac{3}{5} = \frac{27}{25} = 1\frac{2}{25}$

(v) $\frac{1}{3} \times \frac{15}{8} = \frac{5}{8}$

(vi) $\frac{11}{2} \times \frac{3}{10} = \frac{33}{20} = 1\frac{13}{20}$

(vii) $\frac{4}{5} \times \frac{12}{7} = \frac{48}{35} = 1\frac{13}{35}$

Q3 :

Multiply the following fractions:

(i) $\frac{2}{5}\times 5\frac{1}{4}$ (ii) $6\frac{2}{5}\times\frac{7}{9}$ (iii) $\frac{3}{2}\times 5\frac{1}{3}$

(iv) $\frac{5}{6}\times 2\frac{3}{7}$ (v) $3\frac{2}{5}\times\frac{4}{7}$ (vi) $2\frac{3}{5}\times 3$

(vii) $3\frac{4}{7}\times\frac{3}{5}$

Answer :

(i) $\frac{2}{5}\times 5\frac{1}{4}=\frac{2}{5}\times\frac{21}{4}=\frac{21}{10}$

This is an improper fraction and it can be written as a mixed fraction as $2\frac{1}{10}$.

(ii) $6\frac{2}{5}\times\frac{7}{9}=\frac{32}{5}\times\frac{7}{9}=\frac{224}{45}$

This is an improper fraction and it can be written as a mixed fraction as $4\frac{44}{45}$.

(iii) $\frac{3}{2}\times 5\frac{1}{3}=\frac{3}{2}\times\frac{16}{3}=8$

This is a whole number.

(iv) $\frac{5}{6}\times 2\frac{3}{7}=\frac{5}{6}\times\frac{17}{7}=\frac{85}{42}$

This is an improper fraction and it can be written as a mixed fraction as $2\frac{1}{42}$.

(v) $3\frac{2}{5}\times\frac{4}{7}=\frac{17}{5}\times\frac{4}{7}=\frac{68}{35}$

This is an improper fraction and it can be written as a mixed fraction as $1\frac{33}{35}$.

(vi) $2\frac{3}{5}\times 3=\frac{13}{5}\times 3=\frac{39}{5}$

This is an improper fraction and it can be written as a mixed fraction as $7\frac{4}{5}$.

(vii) $3\frac{4}{7}\times\frac{3}{5}=\frac{25}{7}\times\frac{3}{5}=\frac{15}{7}$

This is an improper fraction and it can be written as a mixed fraction as $2\frac{1}{7}$.

Q4 :

Which is greater:

(i) $\frac{2}{7}$ of $\frac{3}{4}$ or $\frac{3}{5}$ of $\frac{5}{8}$

(ii) $\frac{1}{2}$ of $\frac{6}{7}$ or $\frac{2}{3}$ of $\frac{3}{7}$

Answer :

(i) $\frac{2}{7} \times \frac{3}{4} = \frac{3}{14}$

$\frac{3}{5} \times \frac{5}{8} = \frac{3}{8}$

Converting these fractions into like fractions,

$\frac{3}{14} = \frac{3 \times 4}{14 \times 4} = \frac{12}{56}$

$\frac{3}{8} = \frac{3 \times 7}{8 \times 7} = \frac{21}{56}$

Since $\frac{21}{56} > \frac{12}{56}$,

$\therefore \frac{3}{8} > \frac{3}{14}$

Therefore, $\frac{3}{5}$ of $\frac{5}{8}$ is greater.

(ii) $\frac{1}{2} \times \frac{6}{7} = \frac{3}{7}$

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

Since $3 > 2$,

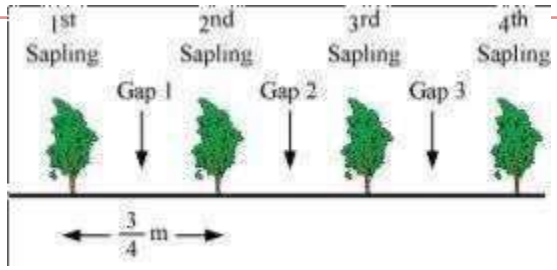
$\therefore \frac{3}{7} > \frac{2}{7}$

Therefore, $\frac{1}{2}$ of $\frac{6}{7}$ is greater.

Q5 :

Saili plants 4 saplings, in a row, in her garden. The distance between two adjacent saplings is $\frac{3}{4}$ m. Find the distance between the first and the last sapling.

Answer :



From the figure, it can be observed that gaps between 1st and last sapling = 3

Length of 1 gap = $\frac{3}{4}$ m

Therefore, distance between **I** and **IV** sapling = $3 \times \frac{3}{4} = \frac{9}{4} = 2\frac{1}{4}$ m

Q6 :

Lipika reads a book for $1\frac{3}{4}$ hours everyday. She reads the entire book in 6 days. How many hours in all were required by her to read the book?

Answer :

Number of hours Lipika reads the book per day = $1\frac{3}{4} = \frac{7}{4}$ hours

Number of days = 6

Total number of hours required by her to read the book = $\frac{7}{4} \times 6$

$= \frac{21}{2} = 10\frac{1}{2}$ hours

Q7 :

A car runs 16 km using 1 litre of petrol. How much distance will it cover using $2\frac{3}{4}$ litres of petrol.

Answer :

Number of kms a car can run per litre petrol = 16 km

Quantity of petrol = $\frac{11}{4}$ litre petrol = $2\frac{3}{4}$ L $= \frac{11}{4}$ L

Number of kms a car can run for = $\frac{11}{4} \times 16$ = 44 km

It will cover 44 km distance by using $2\frac{3}{4}$ litres of petrol.

Q8 :

(a) (i) Provide the number in the box □, such that $\frac{2}{3}\times\square=\frac{10}{30}$.

(ii) The simplest form of the number obtained in □ is_____.

(b) (i) Provide the number in the box □, such that $\frac{3}{5}\times\square=\frac{24}{75}$?

(ii) The simplest form of the number obtained in □ is_____.

Answer :

(a) (i) As $\frac{2}{3}\times\frac{5}{10}=\frac{10}{30}$,

Therefore, the number in the box □, such that $\frac{2}{3}\times\square=\frac{10}{30}$ is $\frac{5}{10}$.

(ii) The simplest form of $\frac{5}{10}$ is $\frac{1}{2}$.

(b) (i) As $\frac{3}{5}\times\frac{8}{15}=\frac{24}{75}$,

Therefore, the number in the box , such that $\frac{3}{5}\times\square=\frac{24}{75}$ is $\frac{8}{15}$.

(ii) As $\frac{8}{15}$ cannot be further simplified, therefore, its simplest fo rm is $\frac{8}{15}$

« Previous Chapter 1 : Integers | Next Chapter 3 : Data Handling »

Exercise 2.4 : Solutions of Questions on Page Number : **46**

Q1 : Find:

(i) $12\div\frac{3}{4}$ **(ii)** $14\div\frac{5}{6}$ **(iii)** $8\div\frac{7}{3}$

(iv) $4\div\frac{8}{3}$ **(v)** $3\div2\frac{1}{3}$ **(vi)** $5\div3\frac{4}{7}$

Answer :

(i) $12 \div \frac{3}{4} = 12 \times \frac{4}{3} = 16$

(ii) $14 \div \frac{5}{6} = 14 \times \frac{6}{5} = \frac{84}{5}$

(iii) $8 \div \frac{7}{3} = 8 \times \frac{3}{7} = \frac{24}{7}$

(iv) $4 \div \frac{8}{3} = 4 \times \frac{3}{8} = \frac{3}{2}$

(v) $3 \div 2\frac{1}{3} = 3 \div \frac{7}{3} = 3 \times \frac{3}{7} = \frac{9}{7}$

(vi) $5 \div 3\frac{4}{7} = 5 \div \frac{25}{7} = 5 \times \frac{7}{25} = \frac{7}{5}$

Q2 :

Find the reciprocal of each of the following fractions. Classify the reciprocals as proper fractions, improper fractions and whole numbers.

(i) $\frac{3}{7}$ (ii) $\frac{5}{8}$ (iii) $\frac{9}{7}$

(iv) $\frac{6}{5}$ (v) $\frac{12}{7}$ (vi) $\frac{1}{8}$

(vii) $\frac{1}{11}$

Answer :

A proper fraction is the fraction which has its denominator greater than its numerator while improper fraction is the fraction which has its numerator greater than its denominator. Whole numbers are a collection of all positive integers including 0.

(i) $\frac{3}{7}$

Reciprocal = $\frac{7}{3}$

(ii) $\frac{5}{8}$

Reciprocal = $\frac{8}{5}$

Therefore, it is an improper fraction.

Therefore, it is an improper fraction.

(

iii) $\frac{9}{7}$

Reciprocal = $\frac{7}{9}$

Therefore, it is a proper fraction.

(iv) $\frac{6}{5}$

Reciprocal = $\frac{5}{6}$

Therefore, it is a proper fraction.

(v) $\frac{12}{7}$

Reciprocal = $\frac{7}{12}$

Therefore, it is a proper fraction.

(vi) $\frac{1}{8}$

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

(vii) $\frac{1}{11}$

Reciprocal = $\frac{11}{1}$

Therefore, it is a whole number.

Therefore, it is a whole number.

Q3 : Find:

(i) $\frac{7}{3} \div 2$ (ii) $\frac{4}{9} \div 5$ (iii) $\frac{6}{13} \div 7$

(iv) $4\frac{1}{3} \div 3$ (v) $3\frac{1}{2} \div 4$ (vi) $4\frac{3}{7} \div 7$

Answer :

(i) $\frac{7}{3} \div 2 = \frac{7}{3} \times \frac{1}{2} = \frac{7}{6}$

(ii) $\frac{4}{9} \div 5 = \frac{4}{9} \times \frac{1}{5} = \frac{4}{45}$

(iii) $\frac{6}{13} \div 7 = \frac{6}{13} \times \frac{1}{7} = \frac{6}{91}$

(iv) $4\frac{1}{3} \div 3 = \frac{13}{3} \div 3 = \frac{13}{3} \times \frac{1}{3} = \frac{13}{9}$

(v) $3\frac{1}{2} \div 4 = \frac{7}{2} \div 4 = \frac{7}{2} \times \frac{1}{4} = \frac{7}{8}$

(vi) $4\frac{3}{7} \div 7 = \frac{31}{7} \times \frac{1}{7} = \frac{31}{49}$

Q4 :

Find:

(i) $\frac{2}{5} \div \frac{1}{2}$ (ii) $\frac{4}{9} \div \frac{2}{3}$ (iii) $\frac{3}{7} \div \frac{8}{7}$

(iv) $2\frac{1}{3} \div \frac{3}{5}$ (v) $3\frac{1}{2} \div \frac{8}{3}$ (vi) $\frac{2}{5} \div 1\frac{1}{2}$

(vii) $3\frac{1}{5} \div 1\frac{2}{3}$ (viii) $2\frac{1}{5} \div 1\frac{1}{5}$

Answer :

(i) $\frac{2}{5} \div \frac{1}{2} = \frac{2}{5} \times 2 = \frac{4}{5}$

(ii) $\frac{4}{9} \div \frac{2}{3} = \frac{4}{9} \times \frac{3}{2} = \frac{2}{3}$

(iii) $\frac{3}{7} \div \frac{8}{7} = \frac{3}{7} \times \frac{7}{8} = \frac{3}{8}$

(

iv) $2\frac{1}{3}\div\frac{3}{5}=\frac{7}{3}\div\frac{3}{5}=\frac{7}{3}\times\frac{5}{3}=\frac{35}{9}$

(v) $3\frac{1}{2}\div\frac{8}{3}=\frac{7}{2}\div\frac{8}{3}=\frac{7}{2}\times\frac{3}{8}=\frac{21}{16}$

(vi) $\frac{2}{5}\div1\frac{1}{2}=\frac{2}{5}\div\frac{3}{2}=\frac{2}{5}\times\frac{2}{3}=\frac{4}{15}$

(vii) $3\frac{1}{5}\div1\frac{2}{3}=\frac{16}{5}\div\frac{5}{3}=\frac{16}{5}\times\frac{3}{5}=\frac{48}{25}$

(viii) $2\frac{1}{5}\div1\frac{1}{5}=\frac{11}{5}\div\frac{6}{5}=\frac{11}{5}\times\frac{5}{6}=\frac{11}{6}$

Exercise 2.5 : Solutions of Questions on Page Number : **47**

Q1 :

Which is greater?

(i) 0.5 or 0.05 (ii) 0.7 or 0.5 (iii) 7 or 0.7

(iv) 1.37 or 1.49 (v) 2.03 or 2.30 (vi) 0.8 or 0.88

Answer :

(i) 0.5 or 0.05

Converting these decimal numbers into equivalent fractions,

$$0.5=\frac{5}{10}=\frac{5\times10}{10\times10}=\frac{50}{100} \text{ and } 0.05=\frac{5}{100}$$

It can be observed that both fractions have the same denominator.

As 50 > 5,

Therefore, 0.5 > 0.05

(ii) 0.7 or 0.5

Converting these decimal numbers into equivalent fractions,

$$0.7=\frac{7}{10} \text{ and } 0.5=\frac{5}{10}$$

It can be observed that both fractions have the same denominator.

As 7 > 5,

Therefore, 0.7 >0.5

(iii) 7 or 0.7

Converting these decimal numbers into equivalent fractions,

$$7=\frac{7}{1}=\frac{7\times10}{1\times10}=\frac{70}{10} \text{ and } 0.7=\frac{7}{10}$$

It can be observed that both fractions have the same denominator.
As 70 > 7,
Therefore, 7 > 0.7

(iv) 1.37 or 1.49

Converting these decimal numbers into equivalent fractions,

$$1.37 = \frac{137}{100} \text{ and } 1.49 = \frac{149}{100}$$

It can be observed that both fractions have the same denominator.

As 137 < 149,

Therefore, 1.37 < 1.49

(v) 2.03 or 2.30

Converting these decimal numbers into equivalent fractions,

$$2.03 = \frac{203}{100} \text{ and } 2.30 = \frac{230}{100}$$

It can be observed that both fractions have the same denominator.

As 203 < 230,

Therefore, 2.03 < 2.30

(vi) 0.8 or 0.88

Converting these decimal numbers into equivalent fractions,

$$0.8 = \frac{8}{10} = \frac{8 \times 10}{10 \times 10} = \frac{80}{100} \text{ and } 0.88 = \frac{88}{100}$$

It can be observed that both fractions have the same denominator.

As 80 < 88, Therefore,
0.8 < 0.88

Q2 :
Express as rupees using decimals:

(i) 7 paise (ii) 7 rupees 7 paise (iii) 77 rupees 77 paise

(iv) 50 paise (v) 235 paise

Answer :

There are 100 paise in 1 rupee. Therefore, if we want to convert paise into rupees, then we have to divide paise by 100.

(i) 7 paise = $\text{Rs } \frac{7}{100} = \text{Rs } 0.07$

(ii) 7 Rs 7 paise = $\text{Rs } 7 + \text{Rs } \frac{7}{100}$

= Rs 7.07

(iii) 77 Rs 77 paise $= \text{Rs } 77 + \text{Rs } \frac{77}{100}$ = Rs 77.77

(

iv) 50 paise $= \text{Rs}\frac{50}{100} = \text{Rs}\,0.50$

(v) 235 paise $= \frac{235}{100}\ \text{rupees} = \text{Rs}\ 2.35$

Q3 :

(i) Express 5 cm in metre and kilometre

(ii) Express 35 mm in cm, m and km

Answer :

(i) 5 cm

$$5\ \text{cm} = \frac{5}{100}\ \text{m} = 0.05\ \text{m}$$

$$5\ \text{cm} = \frac{5}{100000}\ \text{km} = 0.00005\ \text{km}$$

(ii) 35 mm

$$35\text{mm} = \frac{35}{10}\ \text{cm} = 3.5\ \text{cm}$$

$$35\text{mm} = \frac{35}{1000}\ \text{m} = 0.035\ \text{m}$$

$$35\text{mm} = \frac{35}{1000000}\ \text{km} = 0.000035\ \text{km}$$

Q4 :

Express in kg:

(i) 200 g (ii) 3470 g (iii) 4 kg 8 g

Answer :

(i) 200 g $= \frac{200}{1000}\ \text{kg} = 0.2\ \text{kg}$

(ii) 3470 g $= \frac{3470}{1000}\ \text{kg} = 3.470\ \text{kg}$

(iii) 4 kg 8 g $= 4\ \text{kg} + \frac{8}{1000}\ \text{kg}$ = 4.008 kg

Q5 :

Write the following decimal numbers in the expanded form: (i) 20.03 (ii) 2.03 (iii) 200.03

(iv) 2.034

Answer :

(i) 20.03 $= 2\times10+0\times1+0\times\frac{1}{10}+3\times\frac{1}{100}$

(ii) 2.03 $= 2\times1+0\times\frac{1}{10}+3\times\frac{1}{100}$

(iii) 200.03 $= 2\times100+0\times10+0\times1+0\times\frac{1}{10}+3\times\frac{1}{100}$

(iv) 2.034 $= 2\times1+0\times\frac{1}{10}+3\times\frac{1}{100}+4\times\frac{1}{1000}$

Q6 :

Write the place value of 2 in the following decimal numbers:

(i) 2.56 (ii) 21.37 (iii) 10.25

(iv) 9.42 (v) 63.352

Answer :

(i) 2.56

Ones

(ii) 21.37

Tens

(iii) 10.25

Tenths

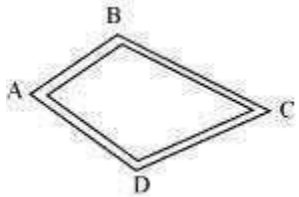
(iv) 9.42

Hundredths

(v) 63.352 Thousandths

Q7 :

Dinesh went from place A to place B and from there to place C. A is 7.5 km from B and B is 12.7 km from C. Ayub went from place A to place D and from there to place C. D is 9.3 km from A and C is 11.8 km from D. Who travelled more and by how much?



Answer :

(
Distance travelled by Dinesh = AB + BC = (7.5 + 12.7) km

$$\begin{array}{r} 7.5 \\ +12.7 \\ \hline 20.2 \end{array}$$

Therefore, Dinesh travelled 20.2 km.

Distance travelled by Ayub = AD + DC = (9.3 + 11.8) km

$$\begin{array}{r} 9.3 \\ +11.8 \\ \hline 21.1 \end{array}$$

Therefore, Ayub travelled 21.1 km.

Hence, Ayub travelled more distance.

Difference = (21.1 - 20.2) km

$$\begin{array}{r} 21.1 \\ -20.2 \\ \hline 0.9 \end{array}$$

Therefore, Ayub travelled 0.9 km more than Dinesh.

Q8 :
Shyama bought 5 kg 300 g apples and 3 kg 250 g mangoes. Sarala bought 4 kg 800 g oranges and 4 kg 150 g bananas. Who bought more fruits?

Answer :

Total fruits bought by Shyama = 5 kg 300 g + 3 kg 250 g

= 8 kg 550 g

$= \left(8+\frac{550}{1000}\right)\text{kg}$

= 8.550 kg

Total fruits bought by Sarala = 4 kg 800 g + 4 kg 150 g

= 8 kg 950 g

$= \left(8+\frac{950}{1000}\right)\text{kg}$

= 8.950 kg

∴ Sarala bought more fruits.

Q9 :
How much less is 28 km than 42.6 km?

Answer :

$$\begin{array}{r} 42.6 \\ -28.0 \\ \hline 14.6 \end{array}$$

Therefore, 28 km is 14.6 km less than 42.6 km.

Exercise 2.6 : Solutions of Questions on Page Number : **52**

Q1 :

Find:

(i) 0.2 x 6 (ii) 8 x 4.6 (iii) 2.71 x 5

(iv) 20.1 x 4 (v) 0.05 x 7 (vi) 211.02 x 4

(vii) 2 x 0.86

Answer :

(i) $0.2 \times 6 = \frac{2}{10} \times 6 = \frac{12}{10} = 1.2$

(ii) $8 \times 4.6 = 8 \times \frac{46}{10} = \frac{368}{10} = 36.8$

(iii) $2.71 \times 5 = \frac{271}{100} \times 5 = \frac{1355}{100} = 13.55$

(iv) $20.1 \times 4 = \frac{201}{10} \times 4 = \frac{804}{10} = 80.4$

(v) $0.05 \times 7 = \frac{5}{100} \times 7 = \frac{35}{100} = 0.35$

(vi) $211.02 \times 4 = \frac{21102}{100} \times 4 = \frac{84408}{100} = 844.08$

(vii) $2 \times 0.86 = 2 \times \frac{86}{100} = \frac{172}{100} = 1.72$

Q2 :

Find the area of rectangle whose length is 5.7 cm and breadth is 3 cm.

Answer :

Length = 5.7 cm
Breadth = 3 cm

Area = Length x Breadth

= 5.7 x 3 = 17.1 cm^2

Q3 :

Find:

(i) 1.3 x 10 (ii) 36.8 x 10 (iii) 153.7 x 10

(iv) 168.07 x 10 (v) 31.1 x 100 (vi) 156.1 x 100

(vii) 3.62 x 100 (viii) 43.07 x 100 (ix) 0.5 x 10

(x) 0.08 x 10 (xi) 0.9 x 100 (xii) 0.03 x 1000

Answer :

We know that when a decimal number is multiplied by 10, 100, 1000, the decimal point in the product is shifted to the right by as many places as there are zeroes. Therefore, these products can be calculated as

(i) 1.3 x 10 = 13

(ii) 36.8 x 10 = 368

(iii) 153.7 x 10 = 1537

(vi) 168.07 x 10 = 1680.7

(v) 31.1 x 100 = 3110

(vi) 156.1 x 100 = 15610

(vii) 3.62 x 100 = 362

(viii) 43.07 x 100 = 4307

(ix) 0.5 x 10 = 5

(x) 0.08 x 10 = 0.8

(xi) 0.9 x 100 = 90 (xiii) 0.03 x 1000 = 30

Q4 :
A two-wheeler covers a distance of 55.3 km in one litre of petrol. How much distance will it cover in 10 litres of petrol?

Answer :

Distance covered in 1 litre of petrol = 55.3 km

Distance covered in 10litre of petrol = 10 x 55.3 = 553 km
Therefore, it will cover 553 km distance in 10 litre petrol.

Q5 : Find:

(i) 2.5 x 0.3 (ii) 0.1 x 51.7 (iii) 0.2 x 316.8

(iv) 1.3 x 3.1 (v) 0.5 x 0.05 (vi) 11.2 x 0.15
(vii) 1.07 x 0.02 (viii) 10.05 x 1.05 (ix) 101.01 x 0.01

(x) 100.01 x 1.1

Answer :

(i) $2.5 \times 0.3 = \frac{25}{10} \times \frac{3}{10} = \frac{75}{100} = 0.75$

(ii) $0.1 \times 51.7 = \frac{1}{10} \times \frac{517}{10} = \frac{517}{100} = 5.17$

(iii) $0.2 \times 316.8 = \frac{2}{10} \times \frac{3168}{10} = \frac{6336}{100} = 63.36$

(iv) $1.3 \times 3.1 = \frac{13}{10} \times \frac{31}{10} = \frac{403}{100} = 4.03$

(v) $0.5 \times 0.05 = \frac{5}{10} \times \frac{5}{100} = \frac{25}{1000} = 0.025$

(vi) $11.2 \times 0.15 = \frac{112}{10} \times \frac{15}{100} = \frac{1680}{1000} = 1.680 = 1.68$

(vii) $1.07 \times 0.02 = \frac{107}{100} \times \frac{2}{100} = \frac{214}{10000} = 0.0214$

(viii) $10.05 \times 1.05 = \frac{1005}{100} \times \frac{105}{100} = \frac{105525}{10000} = 10.5525$

(ix) $101.01 \times 0.01 = \frac{10101}{100} \times \frac{1}{100} = \frac{10101}{10000} = 1.0101$

(x) $100.01 \times 1.1 = \frac{10001}{100} \times \frac{11}{10} = \frac{110011}{1000} = 110.011$

Exercise 2.7 : Solutions of Questions on Page Number : **55**

Q1 : Find:

(i) 0.4 Ã*f*Â· 2 (ii) 0.35 Ã*f*Â· 5 (iii) 2.48 Ã*f*Â· 4

(iv) 65.4 Ã*f*Â· 6 (v) 651.2 Ã*f*Â· 4 (vi) 14.49 Ã*f*Â· 7

(vii) 3.96 Ã*f*Â· 4 (viii) 0.80 Ã*f*Â· 5

Answer :

(i) $0.4 \div 2 = \frac{4}{10} \div 2 = \frac{4}{10} \times \frac{1}{2} = \frac{2}{10} = 0.2$

(ii) $0.35 \div 5 = \frac{35}{100} \div 5 = \frac{35}{100} \times \frac{1}{5} = \frac{7}{100} = 0.07$

(iii) $2.48 \div 4 = \frac{248}{100} \div 4 = \frac{248}{100} \times \frac{1}{4} = \frac{62}{100} = 0.62$

(iv) $65.4 \div 6 = \frac{654}{10} \div 6 = \frac{654}{10} \times \frac{1}{6} = \frac{109}{10} = 10.9$

(v) $651.2 \div 4 = \frac{6512}{10} \div 4 = \frac{6512}{10} \times \frac{1}{4} = \frac{1628}{10} = 162.8$

(vi) $14.49 \div 7 = \frac{1449}{100} \div 7 = \frac{1449}{100} \times \frac{1}{7} = \frac{207}{100} = 2.07$

(vii) $3.96 \div 4 = \frac{396}{100} \div 4 = \frac{396}{100} \times \frac{1}{4} = \frac{99}{100} = 0.99$

(viii) $0.80 \div 5 = \frac{80}{100} \div 5 = \frac{80}{100} \times \frac{1}{5} = \frac{16}{100} = 0.16$

Q2 :
Find:

(i) 4.8 ÃƒÂ· 10 (ii) 52.5 ÃƒÂ· 10 (iii) 0.7 ÃƒÂ· 10

(iv) 33.1 ÃƒÂ· 10 (v) 272.23 ÃƒÂ· 10 (vi) 0.56 ÃƒÂ· 10

(vii) 3.97 ÃƒÂ· 10

Answer :

We know that when a decimal number is divided by a multiple of 10 only (i.e., 10, 100, 1000, etc.), the decimal point will be shifted to the left by as many places as there are zeroes. Since here we are dividing by 10, the decimal will shift to the left by 1 place.

(i) 4.8 ÃƒÂ· 10 = 0 .48

(ii) 52.5 ÃƒÂ· 10 = 5.25

(iii) 0.7 ÃƒÂ· 10 = 0.07

(iv) 33.1 ÃƒÂ· 10 = 3.31

(v) 272.23 ÃƒÂ· 10 = 27.223

(vi) 0.56 ÃƒÂ· 10 = 0.056 (vii) 3.97 ÃƒÂ· 10 = 0.397

Q3 : Find:

(i) 2.7 ÃƒÂ· 100 (ii) 0.3 ÃƒÂ· 100 (iii) 0.78 ÃƒÂ· 100 (iv) 432.6 ÃƒÂ· 100 (v) 23.6 ÃƒÂ· 100 (vi) 98.53 ÃƒÂ· 100

Answer :

We know that when a decimal number is divided by a multiple of 10 only (i.e., 10, 100, 1000, etc.), the decimal point will be shifted to the left by as many places as there are zeroes. Since here we are dividing by 100, the decimal will shift to the left by 2 places. (i) 2.7 ÃƒÂ· 100 = 0.027

(ii) 0.3 ÃƒÂ· 100 = 0.003

(iii) 0.78 ÃƒÂ· 100 = 0.0078

(iv) 432.6 ÃƒÂ· 100 = 4.326

(v) 23.6 ÃƒÂ· 100 = 0.236 (vi) 98.53 ÃƒÂ· 100 = 0.9853

Q4 :
Find:

(i) 7.9 ÃƒÂ· 1000 (ii) 26.3 ÃƒÂ· 1000 (iii) 38.53 ÃƒÂ· 1000

(iv) 128.9 ÃƒÂ· 1000 (v) 0.5 ÃƒÂ· 1000

Answer :

We know that when a decimal number is divided by a multiple of 10 only (i.e., 10, 100, 1000, etc.), the decimal point will be shifted to the left by as many places as there are zeroes. Since here we are dividing by 1000, the decimal will shift to the left by 3 places.

(i) 7.9 ÃƒÂ· 1000 = 0.0079

(ii) 26.3 ÃƒÂ· 1000 = 0.0263

(iii) 38.53 ÃƒÂ· 1000 = 0.03853

(iv) 128.9 ÃƒÂ· 1000 = 0.1289

(v) 0.5 ÃƒÂ· 1000 = 0.0005

Q5 : Find:

(i) 7 ÃƒÂ· 3.5 (ii) 36 ÃƒÂ· 0.2 (iii) 3.25 ÃƒÂ· 0.5

(iv) 30.94 ÃƒÂ· 0.7 (v) 0.5 ÃƒÂ· 0.25 (vi) 7.75 ÃƒÂ· 0.25

(vii) 76.5 ÃƒÂ· 0.15 (viii) 37.8 ÃƒÂ· 1.4 (ix) 2.73 ÃƒÂ· 1.3

Answer :

(i) $7 \div 3.5 = 7 \div \frac{35}{10} = 7 \times \frac{10}{35} = 2$

(ii) $36 \div 0.2 = 36 \div \frac{2}{10} = 36 \times \frac{10}{2} = 180$

(iii) $3.25 \div 0.5 = \frac{325}{100} \div \frac{5}{10} = \frac{325}{100} \times \frac{10}{5} = \frac{65}{10} = 6.5$

(iv) $30.94 \div 0.7 = \frac{3094}{100} \div \frac{7}{10} = \frac{3094}{100} \times \frac{10}{7} = \frac{442}{10} = 44.2$

(v) $0.5 \div 0.25 = \frac{5}{10} \div \frac{25}{100} = \frac{5}{10} \times \frac{100}{25} = 2$

(vi) $7.75 \div 0.25 = \frac{775}{100} \div \frac{25}{100} = \frac{775}{100} \times \frac{100}{25} = 31$

(vii) $76.5 \div 0.15 = \frac{765}{10} \div \frac{15}{100} = \frac{765}{10} \times \frac{100}{15} = 510$

(viii) $37.8 \div 1.4 = \frac{378}{10} \div \frac{14}{10} = \frac{378}{10} \times \frac{10}{14} = 27$

(ix) $2.73 \div 1.3 = \frac{273}{100} \div \frac{13}{10} = \frac{273}{100} \times \frac{10}{13} = \frac{21}{10} = 2.1$

Q6 :

A vehicle covers a distance of 43.2 km in 2.4 litres of petrol. How much distance will it cover in one litre of petrol?

Answer :

Distance covered in 2.4 litres of petrol = 43.2 km

∴Distance covered in 1 litre of petrol = $43.2 \div 2.4 = \frac{432}{10} \div \frac{24}{10} = \frac{432}{10} \times \frac{10}{24} = 18$

Therefore, the vehicle will cover 18 km in 1 litre petro