Fractions
Exercise 2B

solution 01

Answer :

(i) $\frac{3}{5} \times \frac{7}{11} = \frac{3\times7}{5\times11} = \frac{21}{55}$

(ii) $\frac{5}{8} \times \frac{4}{7} = \frac{5\times4}{8\times7} = \frac{5\times1}{2\times7} = \frac{5}{14}$

(iii) $\frac{4}{9} \times \frac{15}{16} = \frac{4\times15}{9\times16} = \frac{1\times5}{3\times4} = \frac{5}{12}$

(iv) $\frac{2}{5} \times 15 = \frac{2}{5} \times \frac{15}{1} = \frac{2\times15}{5\times1} = \frac{2\times3}{1\times1} = 6$

(v) $\frac{8}{15} \times 20 = \frac{8}{15} \times \frac{20}{1} = \frac{8\times20}{15\times1} = \frac{8\times4}{3\times1} = \frac{32}{3} = 10\frac{2}{3}$

(vi) $\frac{5}{8} \times 1000 = \frac{5}{8} \times \frac{1000}{1} = \frac{5\times1000}{8\times1} = \frac{5\times125}{1\times1} = 625$

(vii) $3\frac{1}{8} \times 16 = \frac{25}{8} \times \frac{16}{1} = \frac{25\times16}{8\times1} = \frac{25\times2}{1\times1} = 50$

(viii) $2\frac{4}{15} \times 12 = \frac{34}{15} \times \frac{12}{1} = \frac{34\times12}{15\times1} = \frac{34\times4}{5\times1} = \frac{136}{5} = 27\frac{1}{5}$

(ix) $3\frac{6}{7} \times 4\frac{2}{3} = \frac{27}{7} \times \frac{14}{3} = \frac{27\times14}{7\times3} = \frac{9\times2}{1\times1} = 18$

(x) $9\frac{1}{2} \times 1\frac{9}{19} = \frac{19}{2} \times \frac{28}{19} = \frac{19\times28}{2\times19} = \frac{1\times14}{1\times1} = 14$

(xi) $4\frac{1}{8} \times 2\frac{10}{11} = \frac{33}{8} \times \frac{32}{11} = \frac{33\times32}{8\times11} = \frac{3\times4}{1\times1} = 12$

(xii) $5\frac{5}{6} \times 1\frac{5}{7} = \frac{35}{6} \times \frac{12}{7} = \frac{35\times12}{6\times7} = \frac{5\times2}{1\times1} = 10$

solution 02

Answer :

We have the following:

(i) $\frac{2}{3} \times \frac{5}{44} \times \frac{33}{35} = \frac{2\times5\times33}{3\times44\times35} = \frac{1\times1\times11}{1\times22\times7} = \frac{1\times1\times1}{1\times2\times7} = \frac{1}{14}$

(ii) $\frac{12}{25} \times \frac{15}{28} \times \frac{35}{36} = \frac{1\times3\times5}{5\times4\times3} = \frac{1\times1\times1}{1\times4\times1} = \frac{1}{4}$

(iii) $\frac{10}{27} \times \frac{28}{65} \times \frac{39}{56} = \frac{10\times1\times3}{27\times5\times2} = \frac{1\times1\times3}{27\times1\times1} = \frac{3}{27} = \frac{1}{9}$

(iv) $1\frac{4}{7} \times 1\frac{13}{22} \times 1\frac{1}{15}$

$= \frac{11}{7} \times \frac{35}{22} \times \frac{16}{15} = \frac{11\times35\times16}{7\times22\times15} = \frac{1\times5\times16}{1\times2\times15} = \frac{1\times1\times8}{1\times1\times3} = \frac{8}{3} = 2\frac{2}{3}$

(v) $2\frac{2}{17} \times 7\frac{2}{9} \times 1\frac{33}{52}$

$= \frac{36}{17} \times \frac{65}{9} \times \frac{85}{52} = \frac{36\times65\times85}{17\times9\times52} = \frac{4\times5\times5}{1\times1\times4} = \frac{1\times5\times5}{1\times1\times1} = 25$

(vi) $3\frac{1}{16} \times 7\frac{3}{7} \times 1\frac{25}{39}$

$= \frac{49}{16} \times \frac{52}{7} \times \frac{64}{39} = \frac{7\times4\times4}{1\times1\times3} = \frac{112}{3} = 37\frac{1}{3}$

solution 03

Answer :

We have the following:

(i) $\frac{1}{3}$ of 24 = $24 \times \frac{1}{3} = \frac{24}{1} \times \frac{1}{3} = \frac{24\times1}{1\times3} = 8$

(ii) $\frac{3}{4}$ of 32 = $32 \times \frac{3}{4} = \frac{32}{1} \times \frac{3}{4} = \frac{32\times3}{1\times4} = \frac{8\times3}{1\times1} = 24$

(iii) $\frac{5}{9}$ of 45 = $45 \times \frac{5}{9} = \frac{45}{1} \times \frac{5}{9} = \frac{45\times5}{1\times9} = \frac{5\times5}{1\times1} = 25$

(iv) $\frac{7}{50}$ of 1000 = $1000 \times \frac{7}{50} = \frac{1000}{1} \times \frac{7}{50} = \frac{20\times7}{1\times1} = 140$

(v) $\frac{3}{20}$ of 1020 = $1020 \times \frac{3}{20} = \frac{1020}{1} \times \frac{3}{20} = \frac{51\times3}{1\times1} = 153$

(vi) $\frac{5}{11}$ of Rs 220 = Rs $\left(220 \times \frac{5}{11}\right)$ = Rs (20 × 5) = Rs 100

(vii) $\frac{4}{9}$ of 54 m = $\left(\frac{4}{9} \times 54\right)$ m = (4 × 6) m = 24 m

(viii) $\frac{6}{7}$ of 35 L = $\left(\frac{6}{7} \times 35\right)$ L = (6 × 5) L = 30 L

(ix) $\frac{1}{6}$ of 1 h = $\frac{1}{6}$ of 60 min = $\left(60 \times \frac{1}{6}\right)$ min = 10 min

(x) $\frac{5}{6}$ of an year = $\frac{5}{6}$ of 12 months = $\left(12 \times \frac{5}{6}\right)$ months = (2 × 5) months = 10 months

(xi) $\frac{7}{20}$ of a kg = $\frac{7}{20}$ of 1000 g = $\left(1000 \times \frac{7}{20}\right)$ g = (50 × 7) gm = 350 g

(xii) $\frac{9}{20}$ of 1 m = $\frac{9}{20}$ of 100 cm = $\left(100 \times \frac{9}{20}\right)$ cm = (5 × 9) cm = 45 cm

(xiii) $\frac{7}{8}$ of a day = $\frac{7}{8}$ of 24 h = $\left(24 \times \frac{7}{8}\right)$ h = (3 × 7) = 21 h

(xiv) $\frac{3}{7}$ of a week = $\frac{3}{7}$ of 7 days = $\left(7 \times \frac{3}{7}\right)$ days = 3 days

(xv) $\frac{7}{50}$ of 1 L = $\frac{7}{50}$ of 1000 ml = $\left(1000 \times \frac{7}{50}\right)$ ml = (20 × 7) ml = 140 ml

solution 04

Answer :

Cost of 1kg of apples = $\text{Rs } 18\frac{2}{5} = \text{Rs } \frac{92}{5}$

$\therefore$ Cost of $3\frac{3}{4}$ kg of apples = $\text{Rs } \left(\frac{92}{5} \times 3\frac{3}{4}\right)$

$= \text{Rs } \left(\frac{92}{5} \times \frac{15}{4}\right) = \text{Rs } \left(\frac{23 \times 3}{1 \times 1}\right) = \text{Rs } 69$

Hence, the cost of $3\frac{3}{4}$ kg of apples is Rs 69.

solution 05

Answer :

Cost of 1 m of cloth = $\text{Rs } 42\frac{1}{2} = \text{Rs } \frac{85}{2}$

$\therefore$ Cost of $5\frac{3}{5}$ m of cloth = Rs $\left(\frac{85}{2} \times 5\frac{3}{5}\right)$

$= \text{Rs } \left(\frac{85}{2} \times \frac{28}{5}\right) = \text{Rs } \left(\frac{85 \times 28}{2 \times 5}\right) = \text{Rs } (17 \times 14) = \text{Rs } 238$

Hence, the cost of $5\frac{3}{5}$ m of cloth is Rs 238.

solution 06

Answer :

Distance covered by the car in 1 h = $66\frac{2}{3}$ km

Distance covered by the car in 9 h = $\left(66\frac{2}{3} \times 9\right)$ km

$= \left(\frac{200}{3} \times 9\right) \text{ km} = \left(\frac{200 \times 9}{3 \times 1}\right) \text{ km} = (200 \times 3) \text{ km} = 600 \text{ km}$

Hence, the distance covered by the car in 9 h will be 600 km.

solution 07

Answer :

Capacity of 1 tin = $12\frac{3}{4}\ \text{L} = \frac{51}{4}\ \text{L}$

$\therefore$ Capacity of 26 such tins = $\left(26 \times \frac{51}{4}\right) \text{L}$

$= \left(\frac{26}{1} \times \frac{51}{4}\right) \text{L} = \left(\frac{26 \times 51}{1 \times 4}\right) \text{L} = \left(\frac{13 \times 51}{1 \times 2}\right) \text{L} = \left(\frac{663}{2}\right) \text{L} = 331\frac{1}{2}\ \text{L}$

Hence, 26 such tins can hold $331\frac{1}{2}$ L of oil.

solution 08

Answer :

Cost of 1 ticket = Rs $35\frac{1}{2}$ = Rs $\frac{71}{2}$

$\therefore$ Cost of 308 tickets = Rs $\left(\frac{71}{2} \times 308\right) = \text{Rs } \left(\frac{71}{2} \times \frac{308}{1}\right) = \text{Rs } \left(71 \times 154\right) = \text{Rs } 10934$

Hence, 308 tickets were sold for Rs 10,934.

solution 09

Answer :

Thickness of 1 board = $3\frac{2}{3}$ cm

$\therefore$ Thickness of 9 boards = $\left(9 \times 3\frac{2}{3}\right) \text{ cm}$

$= \left(\frac{9}{1} \times \frac{11}{3}\right) \text{ cm}$ = (3 × 11) cm = 33 cm

Hence, the height of the stack is 33 cm.

solution 10

Answer :

Time taken by Rohit to complete one round of the circular park = $4\frac{4}{5}$ min = $\frac{24}{5}$min

$\therefore$ Time taken to complete 15 rounds = $\left(15 \times \frac{24}{5}\right)$ min

= (3 × 24) min

= 72 min

= 1 h 12 min [$\because$ 1 hr = 60 min]

Hence, Rohit will take 1 h 12 min to make 15 complete rounds of the circular park.

solution 11

Answer :

Weight of Amit = 35 kg

Weight of Kavita = $\frac{3}{5}$ of Amit's weight

= 35 kg x $\frac{3}{5}$ = $\left(35 \times \frac{3}{5}\right)\text{kg} = \left(7 \times 3\right)\ \text{kg} = 21\ \text{kg}$

Hence, Kavita's weight is 21 kg.

solution 12

Answer :

Number of boys in the class = $\frac{5}{7}$ of the total no. of students

$= \frac{5}{7} \times 42 = \left(\frac{5 \times 42}{7}\right) = 5 \times 6 = 30$

∴ Number of girls in the class = 42 − 30 = 12

Hence, there are 12 girls in the class.

solution 13

Answer :

Sapna's total monthly income = Rs 12000

Monthly expenditure = $\frac{7}{8}$ of Rs 12000

= Rs $\left(\frac{7}{8} \times 12000\right)$ = Rs (7 × 1500) = Rs 10500

∴ Monthly savings = Rs 12000 − Rs 10500

= Rs 1500

Hence, Sapna deposits Rs 1500 in the bank every month.

solution 14

Answer :

Side of the square field = $4\frac{2}{3}\ \text{m}$

∴ Area of the square = $(\text{side})^2$

$= \left(4\frac{2}{3}\ \text{m}\right)^2$

$= \left(\frac{14}{3}\ \text{m}\right)^2 = \frac{14}{3}\ \text{m} \times \frac{14}{3}\ \text{m} = \left(\frac{14 \times 14}{3 \times 3}\right)\text{m}^2 = \frac{196}{9}\ \text{m}^2 = 21\frac{7}{9}\ \text{m}^2$

Hence, the area of the square field is $21\frac{7}{9}\ \text{m}^2$.

Solution 15

Answer :

Length of the rectangular park = $41\frac{2}{3}\ \text{m} = \frac{125}{3}\ \text{m}$

Its breadth = $18\frac{3}{5}\ \text{m} = \frac{93}{5}\ \text{m}$

∴ Its area = length × breadth

$= \left(\frac{125}{3} \times \frac{93}{5}\right)\text{m}^2$

= (25 × 31) m = 775 m^2

Hence, the area of the rectangular park is 775 m^2.