

General Science and abilities

Q. No. 1 - 14 cows eat 63 kg grass in 18 days. How many cows will eat 770 kg grass in 28 days?

Solution:

Cows	Grass	Days
↑ 14	63 ↑	18 ↓
↑ x	770 ↑	28 ↓

$$\frac{x}{14} = \frac{770 \times 18}{63 \times 28}$$

$$x = \frac{770 \times 18 \times 14}{63 \times 28}$$

$$x = \frac{770 \times 18 \times 14}{63 \times 28}$$

$$x = \frac{770 \times 9 \times 2}{21}$$

$$x = \frac{770 \times 3}{7}$$

$x = 110$ cows will eat 770 kg grass in 28 days.

Q. No. 2 A factory manufactures 560 fans in 7 days with 20 machines. How many fans would be manufactured in 12 days with 18 machines?

Solution

Fans	Machines	Days
↑ 560	20 ↑	7 ↑
↑ x	18 ↑	12 ↑

$$\frac{x}{560} = \frac{18 \times 12}{20 \times 7}$$

$$x = \frac{18 \times 12 \times 560}{20 \times 7}$$

$$= 18 \times 48$$

$= 864$ fans would be manufactured

$$\begin{array}{r} 560 \\ \times 12 \\ \hline 1120 \\ \times 560 \\ \hline 31360 \end{array}$$

Q.No.3 The price of 80 shirts is Rs. 22000
what will be price of 30 shirts?

Solution

$$80 : 30 :: 22000 : x$$

$$\frac{80}{30} = \frac{22000}{x}$$

$$80x = 22000 \times 30$$

$$x = \frac{22000 \times 30}{80}$$

$$x = \frac{66000}{8}$$

Q.No.4. Hamza spends 20% of his total income on house rent, 70% on domestic expenditure. If his savings is Rs. 1800, what will be his total income?

(b) change into fraction 70%

(c) Find 15% of 600

Solution (a) let the total income be "x"

Formula:-

$$\text{Income} = \text{Saving} + \text{Expenditure}$$

$$\text{Expenditure} = \text{Rent} + \text{Domestic expenditure}$$

$$= \left(\frac{20}{100} \times x\right) + \left(\frac{70}{100} \times x\right)$$

$$= \frac{2}{10}x + \frac{7}{10}x$$

$$\text{Saving} = 1800$$

By putting values in formula

$$x = 1800 + \left(\frac{2x}{10} + \frac{7x}{10}\right)$$

$$x = 1800 + \left(\frac{2x+7x}{10}\right)$$

$$x = 1800 + \frac{9x}{10}$$

$$x - \frac{9x}{10} = 1800$$

$$\frac{10x - 9x}{10} = 1800$$

$$x = \frac{1800 \times 10}{1}$$

$$\boxed{x = 18000} \text{ - total income}$$

$$20\% \text{ of } 18000 \text{ (Rent)} = \frac{20}{100} \times 18000$$

$$= 3600$$

$$70\% \text{ of } 18000 \text{ (domestic)} = \frac{70}{100} \times 18000$$

$$= 12600$$

$$\begin{aligned} \text{Saving} &= \text{Income} - (\text{Expenditure}) \\ &= 18000 - (12600 + 3600) \\ &= 18000 - 16200 \\ &= 1800 \end{aligned}$$

(b) change into fraction 70%

$$70\% = \frac{70}{100} = \frac{7}{10}$$

(c) 15% of 600

$$= \frac{15}{100} \times 600$$

$$= 90$$

Q No. 4 - (a) Which fraction is larger

$$\frac{7}{9}, \frac{1}{4}, \frac{13}{36}$$

multiply with suitable number to make the denominator same

$$\frac{7 \times 4}{9 \times 4}, \frac{1 \times 9}{4 \times 9}, \frac{13 \times 1}{36 \times 1}$$

$$\frac{28}{36}, \frac{9}{36}, \frac{13}{36}$$

Answer: $\frac{7}{9}$ is the largest fraction.

(b) solve the following

$$(i) (7)^2 + x - (2 \times 4) \div 2$$

$$= 49 + x - 8 \div 2$$

$$= 49 + x - 4$$

$$= 45 + x \rightarrow \text{Answer}$$

$$(iii) (x^2)^3 = ?$$

$$= x^{2 \times 3} = x^6$$

$$(iv) \frac{x^{a+b}}{x^{c-d}} = ?$$

$$= x^{a+b-c+d}$$

$$(ii) 9 + 3 + 3 \times 2$$

$$= 9 + 3 + 6$$

$$= 18 \text{ Answer}$$

$$(iv) x^a \cdot x^b = ?$$

$$= x^{a+b}$$

(vi) convert into meter : 10cm

$$100 \text{ cm} = 1 \text{ m}$$

$$1 \text{ cm} = \frac{1}{100} \text{ m}$$

$$10 \text{ cm} = \frac{1}{100} \times 10 \text{ m}$$

$$10 \text{ cm} = \frac{1}{10} \text{ m}$$

$$\boxed{10 \text{ cm} = 0.1 \text{ meter}}$$