

## Assignment: General Science & Ability

Question 1: 14 cows ... in 28 days:

Solution:

Cows : weight of grass : days  
↑ 14 : ↑ 63 : ↓ 18  
↑ x : ↑ 770 : ↓ 28

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

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

$$x = 110$$

Question 2: A factory manufacture ...  
18 machines?

Solutions Fans : Days : machines

↑ 560 : ↑ 7 : ↑ 20  
↑ x : ↑ 12 : ↑ 18

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

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

$$x = 864$$

Question 3: The price of 80 ... shirts?

Solution:

Shirts : Price  
↑ 80 : ↑ 22000  
↑ 30 : ↑ x

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

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

$$x = 8250$$

Question 4: (a) Hamza spends 20%  
... total income?

Solution: Hamza's total income =  $x$

Hamza spends on house rent = 20%  $\times x$

He spends on domestic expenditure = 70%  $\times x$

Hamza's saving = 1800 Rs

Total income = expenditures + Savings

$$x = 20\% \times x + 70\% \times x + 1800$$

$$x = 90\% \times x + 1800$$

$$x = \frac{90}{100} \times x + 1800$$

$$x = 0.9x + 1800$$

$$x - 0.9x = 1800$$

$$0.1x = 1800$$

$$x = \frac{1800}{0.1}$$

$$x = 18000 \text{ Rs}$$

Hamza's Total Income = 18000 Rs

(b) Change into fractions

70%

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

(c) Find 15% of 100

Solution:

$$\begin{aligned} 15\% \text{ of } 100 &= 15\% \times 100 \\ &= \frac{15}{100} \times 100 \\ &= 15 \end{aligned}$$

Question 5(a) which fraction is larger  $\frac{7}{9}$ ,  $\frac{1}{4}$ ,  $\frac{13}{36}$

Solution:

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

Multiply by LCM

$$\begin{aligned} \frac{7}{9} \times 36, \quad \frac{1}{4} \times 36, \quad \frac{13}{36} \times 36 \\ 7 \times 4, \quad 9, \quad 13 \\ \underline{28}, \quad 9, \quad 13 \end{aligned}$$

$\frac{7}{9}$  is larger fraction

2	9, 4, 36
2	9, 2, 18
3	9, 1, 9
3	3, 1, 3
	1, 1, 1

$$2 \times 2 \times 3 \times 3 = 36$$

(b) Solve:

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

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

$$= 49 + x - 4$$

$$= 49 - 4 + x$$

$$= 45 + x$$

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

$$= 9 + 3 + 6$$

$$= 18$$

$$(c) \quad (x^2)^3 = ?$$

$$(x^2)^3 = x^6$$

$$(d) \quad x^a \cdot x^b = ?$$

$$\Rightarrow x^a \cdot x^b = x^{a+b}$$

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

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

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

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

(e) Convert into meter: 10 cm

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

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

$$10 \text{ cm} = 0.1 \text{ m}$$

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