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Date: 12-10-23

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ASSIGNMENT

GSA

Q1. 14 cows eat 63 kg grass in 18 days. How many cows will eat 770 kg in 28 days.

Compound Proportion

Solution Construct a table

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

Step 2 Arrows from $x \rightarrow 14$ and compare with known

Step 3 Solve.

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

$$\frac{x}{14} = 12.2 \times 0.6$$

~~$$x = 12.2 \times 0.6 \times 14$$~~

~~$$x = 102 \text{ cows}$$~~

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Question 2. A factory manufactures 560 fans in 17 days with 80 machines. How many fans would be fan in 12 days with 18 machines.

Solution: **Compound Proportion**

Step 1 Table Construction

Machines	Fans	Days
80	560	17
18	x = ?	12

Arrows indicate: Machines (18 to 80) is 'Unknown', Days (17 to 12) is 'Known'.

Step 2 Arrows from unknown (x → 560) and compare to both knowns (machines & days)

Step 3 Solve

$$\frac{x}{560} = \frac{18}{80} \times \frac{12}{17}$$

$$\frac{x}{560} = 0.9 \times 1.7$$

$$x = 1.53 \times 560$$

$$x = 856 \text{ Fans}$$

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(3)

Question 3 The price of 80 shirts is Rs 22000, what will be the price of 30 shirts.

Solution Simple Proportion

Step 1 ~~Table construction~~ Table construction

Price	Shirts
22000	80
x	30

Step 2 Arrows

Step 3 Solve $\frac{x}{22000} = \frac{30}{80}$

$$\frac{x}{22000} = 0.375$$

$$x = 0.375 \times 22000$$

$$x = 8250$$

give final answer in the form of statement.

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Question 4 a) Hamza spends 20% of his total income on house rent, 70% on domestic expenditure. If his savings is R 1800. What will be his total income.

By defining Ratio

Solution

Income = ?

House Rent = 20% of x = $\frac{20}{100}(x)$ = $\frac{100}{360}$ | $x = \frac{100}{20} = 5$

Domestic expense = 70% of x = $\frac{70}{100}(x)$ = $\frac{100}{70} = 1.42$

= 1260

Savings = 1800 = x

Total Income = Expenses + Savings

= 360 + 1260 + 1800

= 3420 Ruper

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(b) Change into fractions 70%

70% = 70/100

= 7/10

(c) Find 15% of 600

= 15 x 600 / 100

= 15 x 6 = 90

Question (5) Which fraction is larger in the following .

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

Ans. $\frac{7}{9}$ (larger)

(b) Solve

$$\begin{aligned} (a) \quad & (7)^2 + x - (2 \times 4) \div 2 \\ & = 14 + x - 8 \div 2 \\ & = 14 + x - 4 \\ & = 14 - 4 \end{aligned}$$

$$x = -10$$

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

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

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

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

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

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

further simplify it by opening brackets

(e) Convert into meter = 10cm

$$\begin{array}{l} 1 \text{ m} = 100 \text{ cm} \\ x = 10 \text{ cm} \end{array}$$

$$= \frac{100}{100}$$

$$x = 0.1 \text{ m}$$