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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.

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

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

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

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

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(2)

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
20	560	7
18	$x = ?$	12

Arrows indicate: Machines (20 to 18) is 'Known', Fans (560 to x) is 'Unknown', Days (7 to 12) is 'Known'.

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

Step 3 Solve

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

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

$$x = 1.53 \times 560$$

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

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

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

$$x = 0.375 \times 22000$$

$$x = 8250$$

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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 Rs 1800. What will be his total income.

By defining Ratio

Solution

Income = ?

House Rent = 20% of x $\frac{20}{100}(x)$ $\left(\frac{1800}{x} \right)$ $x = \frac{100}{20} = 5$

$= \frac{100}{100} = 1$

Domestic expense = 70% of $x = \frac{70}{100}(x)$ $\left(\frac{1800}{x} \right)$ $x = \frac{100}{70} = 1.42$

$= 1260$

Savings = $1800 = x$

Total Income = Expenses + Savings

$= 360 + 1260 + 1800$

$= 3420 \text{ Rupee}$

(b) Change into fractions 70%

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

$= \frac{7}{10}$

(c) Find 15% of 600

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

$= 15 \times 6 = 90$

Date: _____

(5)

Sara

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

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

$$x = -10$$

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

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

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

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

$$x^{(a+b)}$$

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

$$x^{(c-d)}$$

(e) Convert into meter = 10cm

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

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

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