Assignment #1

General Ability

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21/11/23

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Question # 1

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

Solution of the Question:

Given Data:

① Quantity no 1 : cows
② Quantity no 2 : grass
③ Quantity no 3 : days

} compound proportion

To find:

number of cows for 770 kg ?

formula:

∴ Arrow method

Solution:

cows	grass	days
14 ↑	↑ 63 kgs	18
x	770 kgs	↓ 28

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

$$\frac{x}{14} \times \frac{2}{28} = \frac{110}{770} \times \frac{6}{18}$$
$$\frac{63}{21}$$
$$\frac{7}{1}$$

$$\frac{2x}{2} = 110 \times \frac{2}{2}$$

$$\boxed{x = 110 \text{ cows}}$$

∴ 110 cows will eat 770 kg grass in 28 days

Question # 02

A factory manufactures 560 fans in 7 days with 20 machines. How many fans would be manufactured in 12 days with 18 machines

Given Data:

1. Quantity no 1 : fans
2. Quantity no 2 : days
3. Quantity no 3 : machines

} compound proportion

Formula:

:: Arrow method

Find:

no of fans to be manufactured in 12 days.

Solution:

days	machines	fans
↑ 7	↑ 20	↑ 560
12	18	x

$$\frac{x}{560} = \frac{18}{\cancel{20}\ 10_5} \times \frac{\cancel{12}\ \cancel{6}_3}{7}$$

$$x = \frac{18}{\cancel{5}} \times \frac{3}{\cancel{7}\ 1} \times \cancel{560}^{16\ \cancel{80}}$$

$$x = 18 \times 3 \times 16$$

$$\boxed{x = 864}$$

$$\begin{array}{r} (4)\ 18 \\ \times 16 \\ \hline 102 \\ 18\times \\ \hline 288 \end{array}$$

$$\begin{array}{r} (2)\ 288 \\ \times\ 3 \\ \hline 864 \end{array}$$

8 64 fans will be made in 12 days with 18 machines.

Question no 3:

The price of 80 shirts is Rs 22000/-. What will be the price of 30 shirts?

Given data:

Price of 80 shirts = 22000

To find:

Price of 30 shirts = ?

formula:

Unitary method

Solution:

80 shirts = 22000

1 shirt = ?

$$\text{Price of 1 shirt} = \frac{1 \times 22000}{80}$$

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

Price of 1 shirt = 275

1 Shirt = 275

30 Shirts = ?

$$= 275 \times 30$$

$$x = 8250$$

	② ① 275
×	30
	000
	825×
	8250

Price of 30 Shirts will be 8250/-

Question #4a

Hamza spends 20% of his total income on house rent, 70% on domestic expenditure. If his saving is Rs. 1800/- what will be his total income.

Given data:

Let the total income of Hamza = x

Now

$$x = 70\%(x) + \frac{20}{100}(x) + 1800$$

$$x = \frac{70}{100}(x) + \frac{20}{100}(x) + 1800$$

Xing both sides of the equation by 100

$$100x = 100\left(\frac{70}{100}x\right) + \frac{20}{100}(100)x + 1800 \times 100$$

$$100x = 70x + 20x + 180000$$

$$100x = 90x + 180000$$

$$180000 = 100x - 90x$$

$$180000 = +10x$$

$$\boxed{x = 18000}$$

Question # 4b

Change into fraction:

70 %

$= \frac{70}{100}$

Simple fraction $= \frac{7}{10}$

Answer =

Question # 4c

Find 15 % of 600

$= \frac{15}{100}(600)$

$= 15 \times 6$

$\Rightarrow 90$

$$\begin{array}{r} 15 \\ \times\ 6 \\ \hline 90 \end{array}$$

Answer =

Question # 5a

Which fraction is larger in the following

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

4	9-4-36
9	9-1-9
	1-1-1

Taking LCM of 9, 4, 36 = 36

Preparing for common denominator

$\frac{7}{9} \times \frac{4}{4} = \frac{28}{36}$

$\frac{1}{4} \times \frac{9}{9} = \frac{9}{36}$

$\frac{13}{36} \times \frac{1}{1} = \frac{13}{36}$

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

$\frac{7}{9}$ is the largest.

Answer

5 (b) Solve

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

BDMAS

$= 49 + x - 8 \div 2$

$= 49 + x - 4$

$= 45 + x$

$x = -45$

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

BDMAS

$9 + 3 + 6$

$= 18$

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

$= x^6$

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

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

x^{a+b}

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

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

(e) Convert into meter

10 cm

1 meter = 100 cm

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

$\Rightarrow 10 \times$ cm

$\Rightarrow 10 \times \frac{1}{100}$ meter

$\Rightarrow \frac{1}{10}$ meter

$\Rightarrow 0.1$ meter