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GSA

Part II

Section - II:-

Q. 7.

Sol.

a) let two numbers x, y

$$\text{Given } x + y = 23 \rightarrow \textcircled{1}$$

$$\text{Given } x \times y = 132 \rightarrow \textcircled{2}$$

from eq. (1)

$$\textcircled{3} \leftarrow y = 23 - x \text{ put in eq. 2}$$

$$x \times y = 132$$

$$x(23 - x) = 132$$

$$23x - x^2 = 132$$

$$x^2 - 23x + 132 = 0$$

$$x^2 - 12x - 11x + 132 = 0$$

$$x(x - 12) - 11(x - 12) = 0$$

$$(x - 12)(x - 11) = 0$$

$$\text{either } x - 12 = 0 \text{ or } x - 11 = 0$$

$$x = 12$$

$$x = 11$$

from eq. (3)

$$y = 23 - 12$$

$$y = 11$$

$$y = 23 - 11$$

$$y = 12$$

so ans is

$$\{x, y\} = \{11, 12\} \text{ or } \{12, 11\}$$

b)

Sol. Given 40% of number "x" $\neq$ 20% of 650 + 190

$$40\% \times x = 650 \times 20\% + 190$$

$$\frac{40}{100} \times x = \frac{650 \times 20}{100} + 190$$

$$\frac{4}{10} x = 130 + 190$$

$$\frac{4x}{10} = 320$$

$$4x = 3200$$

$$x = \frac{3200}{4}$$

$$\boxed{x = 800}$$

c)

Sol. Car Price : 70 million after 20% discount

Marked price ?

$$\text{So, } 0 = \text{SP} + \text{MP} - \text{SP} - \text{dx}$$

"x" is marked price

~~x x 20~~

$$x - x \times 20\% = 70 \text{ million}$$

$$x - \frac{20x}{100} = 70$$

$$x - \frac{x}{5} = 70$$

$$x \left(1 - \frac{1}{5}\right) = 70$$

$$x \left(\frac{5-1}{5}\right) = 70$$

$$\frac{4x}{5} = 70$$

$$\frac{4x}{5} = 70$$

$$4x = 350$$

$$x = \frac{350}{4}$$

$$x = 87.5$$

Market Price 87.5 million

d.)

$$x + x \times 10\% = y$$

$$y - y \times 10\% = z$$

$$y = z = 7$$

Q.8:-

a)

$$\text{area} = 289 \text{ sq. ft}$$

$$\text{per foot} = 58$$

$$\text{One side} = \sqrt{289} = 17 \text{ ft}$$

$$4 \text{ sides} = 4 \times 17 = 68 \text{ ft}$$

$$68 \times 58 = 3964 \text{ rupees}$$

b)

$$\text{Avg salary of 24} = 15000$$

$$\frac{\text{Sum}}{24} = 15000 \rightarrow \text{eqn } ①$$

adding Manager's

$$\frac{\text{Sum} + x}{25} = 19000 \rightarrow \text{eqn } ②$$

$$\text{Sum} + x = 19000 \times 25$$

$$\text{Sum} = (19000 \times 25) - x \rightarrow ③$$

From ①

$$\text{Sum} = 15000 \times 24 \rightarrow ④$$

equating ③ & ④

$$15000 \times 24 = (19000 \times 25) - x$$

$$360000 = 475000 - x$$

$$x = 475000 - 360000$$

$$x = 115000$$

B

c.

Article original worth = x

~~$x +$~~

$+$

~~$x +$~~

d.

if daughter is Girl's Mother (Not specified)
then boy is brother

if daughter is not Girl's Mother
then Cousin

$$C. x + x \times y\% = 1920$$

$$x \times y\% = 1280$$

Equally

~~$$x + x \times y\% = x \times z\%$$~~

~~$$x \times y\% = x - x \times z\%$$~~ at

$$x + x \times y\% = 1920$$

$$y\% = \frac{1920 - x}{x}$$

$$y\% = \frac{1280 - x}{-x}$$

equating both

$$\frac{1280 - x}{-x} = \frac{1920 - x}{x}$$

$$1280 - x = \frac{1920 - x}{x} \times (-x)$$

$$1280 - x = -1920 + x$$

$$-2x = -1920 - 1280$$

$$-2x = -3200$$

$$x = 1600$$

Original Price

$$1600 \times 25\%$$

$$1600 \times \frac{25}{100}$$

$$16 \times 25 = 400$$

$$\text{So, } 1600 + 400 = 2000$$

Article should be sold
at 2000 rupees.