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Paper:- Business Maths

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Q1:- MCO₅

⇒ 1:- (E)

⇒ 2:- (B)

⇒ 3:- (D)

⇒ 4:- (E)

⇒ 5:- (C)

⇒ 6:- (D)

⇒ 7:- (E)

⇒ 8:- (E)

⇒ 9:- (A)

⇒ 10:- (E)

Q: 2

(a)

Sol:-

A) Selling Price as percentage of Cost?

$$\text{Selling Price} = 5.67$$

$$\text{Percentage of Cost} = 100$$

$$\text{So } \frac{5.67}{100}$$

$$\text{Selling Price as \% of Cost} = \frac{0.0567 \text{ or } 5.67}{100}$$

b) Selling Price = ?

As we formula

$$\text{Markup on Cost} = \left(\frac{\text{Price} - \text{Cost}}{\text{Cost}} \right)$$

$$\text{Markup on Cost} = 0.26 \left(\frac{\text{Price} - 4.50}{4.50} \right)$$

By Cross Multiplication

$$0.26 \times 4.50 = \text{Price} - 4.50$$

$$\Rightarrow 1.17 = \text{Price} - 4.50$$

$$\Rightarrow \text{Price} = 1.17 + 4.50$$

$$\text{Selling Price} = 5.67$$

Q:-2

(a)

Sol:-

A) Selling Price as Percentage of Cost

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$$\Rightarrow 1.17 = \text{Price} - 4.50$$

$$\Rightarrow \text{Price} = 1.17 + 4.50$$

$$\text{Selling Price} = 5.67$$

(C) Markup

$$\text{Markup} = \frac{\text{Selling Price} - \text{Cost}}{\text{Cost}}$$

$$\text{Markup} = \frac{5.67 - 4.50}{4.50}$$

$$\text{Markup} = \frac{1.17}{4.50}$$

$$\text{Markup} = 0.26 \text{ or } 26\%$$

Q:- 3

Part (A)

Solution:-

$$\begin{aligned} \text{Put age of sister} &= x \\ \text{Age of Brother} &= y \\ x + y &= 60 \text{ (eq 1)} \end{aligned}$$

Now

$$x - 2 = 3(58 - x)$$

$$x - 2 = 174 - 3x$$

$$x + 3x = 174 + 2$$

$$4x/4 = 176/4$$

$$x = 44$$

Now put in (Eq 1)

$$x + y = 60$$

$$y = 60 - 44$$

$$y = 16 \text{ Ans.}$$

Part (B)

Solution:-

$$\text{Selling Price} = 18.75$$

$$\text{Cost} = 15$$

$$\text{Markup based on cost} = 3.75$$

Percentage markup based on cost

$$3.75/15 \times 100\% = 25\%$$

Q:- 3

Part (A)

Solution:-

$$\begin{aligned} \text{Put age of sister} &= x \\ \text{Age of Brother} &= y \\ x + y &= 60 \text{ (eq 1)} \end{aligned}$$

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Part (B)

Solution:-

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$$\text{Markup based on cost} = 3.75$$

Percentage markup based on cost

$$3.75/15 \times 100\% = 25\%$$

Q=4

Part (A)

Solution:-

List piece - discount

$$\text{Net cost} = 150 - 0.2(150)$$

$$\text{Net cost} = 150 - 30$$

$$\text{Net cost} = \$120$$

Part (B)

Heat and Electricity cost = 1080

Let the consumption of light = x

Consumption of Heat is = $3x$

How much each expense cost company = ?

Solution:-

$$1 + 3 = 4$$

$$\text{So, the expenses of light} = \frac{1}{4} \times 1080$$

$$= \frac{1080}{4}$$

$$\text{Expenses of light} = 270$$

Now the expenses of heat = ?

$$\text{Expenses of Heat} = \frac{3}{4} \times 1080$$

For simplification first we will multiply 1080 by 3 and then the total of them will be divided by 4.

$$\Rightarrow 3 \times 1080 = 3240$$

$$\Rightarrow \frac{3240}{4} = 810$$

Expense of heat = 810

For Verification: $810 + 270 = 1080$.

Q:- 5

Part (A)

Solution:-

Let the time taken by man be x and by y .

$$\Rightarrow \frac{4}{x} + \frac{6}{y} = \frac{1}{5} \rightarrow \textcircled{1}$$

$$\Rightarrow \frac{3}{x} + \frac{4}{y} = \frac{1}{7} \rightarrow \textcircled{2}$$

Let $u = \frac{1}{x}$ and $v = \frac{1}{y}$

$$4u + 6v = \frac{1}{5} \times 3$$

$$3u + 4v = \frac{3}{5}$$

$$12u + 16v = \frac{4}{7}$$

$$2v = \frac{3}{5} \times \frac{1}{7} = \frac{21-20}{35} = \frac{1}{35}$$

$$v = \frac{1}{35} \times 2 = \frac{1}{70} = \frac{1}{y}$$

$$y = 70 \text{ days} \quad x = 35 \text{ days}$$

Q:-5

Part (B)

Solution:-

$$\text{List Price} = 150$$

$$\begin{aligned}\text{Net Cost} &= 150 - 0.2(150) \\ &= 150 - 30\end{aligned}$$

$$\text{Net Cost} = 120.$$