

Alina Ayoub

Batch-063

37

Two number Q No:2
(A)

are = 3:5

$$(3x-9) : 5x-9 = 12:23$$

$$69x - 207 = 60x - 108$$

$$69x - 60x = 207 - 108$$

$$9x = 99$$

$$x = 11$$

$$3x = 3(11) = 33$$

$$5(x) = 5(11) = 55$$

33 is the smaller number

(B)

Three Partners ratio = 5 : 7 : 8

$$14x : 8y : 7z = 5 : 7 : 8$$

$$\frac{14x}{8y} = \frac{5}{7} \Rightarrow \frac{98x}{40} = y \Rightarrow \frac{49}{20}x = y$$

$$\frac{14x}{7z} = \frac{5}{8} \Rightarrow \frac{112x}{35} = z \Rightarrow \frac{112x}{35} = z$$

$$x : y : z = x : \frac{49}{20}x : \frac{112}{35}x$$
$$= x : \frac{49}{20}x : \frac{16}{5}x$$

Multiply by 20

$$x : y : z = 20x : 49x : 64x$$

Investment ratio = 20 : 49 : 64

(C)

Average of A, B, C = 45

$$\frac{A+B+C}{3} = 45$$

$$A+B+C = 135$$

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$$\text{Average of A and B} = \frac{A+B}{2} = 40$$

$$A+B = 80$$

$$\text{Avg. of B and C} = 43$$

$$\frac{B+C}{2} = 43 \Rightarrow B+C = 86$$

$$A + 86 = 135$$

$$A = 135 - 86$$

$$A = 49$$

$$49 + B = 80$$

$$B = 80 - 49 = 31$$

(D)

$$x + 17 = \frac{60}{x}$$

$$x^2 + 17x = 60$$

$$x^2 + 17x - 60 = 0$$

$$x^2 + 20x - 3x - 60 = 0$$

$$x(x+20) - 3(x+20) = 0$$

$$(x+20)(x-3) = 0$$

$$x = -20$$

$$x = 3$$

$$x = 3$$

Question No: 03

(A)

$$\text{Current price} = x$$

$$\text{Percentage profit} = \frac{\text{profit}}{\text{current price}} \times 100$$
$$= \frac{(1920x)}{x} \times 100$$

$$\text{percentage loss} = \frac{\text{loss}}{\text{current price}} \times 100$$

$$= \frac{x - 1280}{x} \times 100$$

$$\text{Profit}(\%) = \text{Loss}(\%)$$

$$\frac{1920 - x}{2} \times 100 = \frac{x - 1280}{2} \times 100$$

$$1920 + 1280 = 2x$$

$$3200 = 2x$$

$$1600 = x$$

$$100\% \text{ S.P.} = 1600$$

$$\text{for } 25\% \text{ profit} = 125\% \text{ of } 1600$$

$$100 + 25 = 125$$

$$\frac{125}{100} \times 1600$$

$$\text{Required S.P.} = 2000$$

(B)

$$A = 15, B = 20 \Rightarrow A's = \frac{1}{15}, B's = \frac{1}{20}$$

$$A \text{ and } B \text{ work fraction} = \frac{1}{15} + \frac{1}{20}$$

$$= \frac{4+3}{60} = \frac{7}{60}$$

$$\text{work together for 4 days} = \frac{4 \times 7}{60} = \frac{28}{60}$$

$$\text{work left} = 1 - \frac{28}{60} = \frac{32}{60} = \frac{8}{15}$$

(C)

Remaining = $1 - \frac{28}{60} = \frac{32}{60} = \frac{8}{15}$

Present future

Person $\frac{2}{5}x$ $\frac{2}{5}x + 8$ ✓

Mother x $x + 8$ ✓

$$\frac{2}{5}x + 8 = \frac{1}{2}(x + 8)$$

$$\frac{2}{5}x - \frac{x}{2} + 8 - 4 = 0$$

$$\frac{4x - 5x}{10} = -4$$

$$-x = -40$$

$$\text{mother age} = x = 40$$

(D)

A number is x

$$\frac{3}{5}x$$

$$= \frac{5x}{3} - \frac{3x}{5}$$

$$= \frac{25x - 9x}{15}$$

$$\text{Error} = \frac{16x}{15}$$

$$\text{Error percentage} = \frac{\text{error}}{\text{total}} \times 100$$

$$= \left(\frac{16x}{15} \div \frac{5x}{3} \right) \times 100$$

$$= \left(\frac{16x}{15} \times \frac{3}{5x} \right) \times 100$$

$$= \frac{16}{25} \times 100$$

$$\text{Error Percentage} = 64\%$$

(5)