Alina Ayoub Batch-063

Q No: 2

(A)

Two number 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

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

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

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

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

$= x : \frac{49}{20}x : \frac{16}{5}x$

Multiply by 20

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

Investment ratio = 20 : 49 : 64

(C)

Average of A, B, C = 45

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

$A+B+C = 135$

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

$A+B = 80$

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)

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

$x^2 + 17x = 60$

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

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

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

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

$x = -20, \quad x = 3$

$x = 3$

Question No: 03

(A)

Current price = x

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

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

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

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

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

$1920 + 1280 = 2x$

$3200 = 2x$

$1600 = x$

100% S.P = 1600

For 25% profit = 125% of 1600

$\because 100 + 25 = 125$

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

Required S.P = 2000

(B)

A = 15 , B = 20

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

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

Work together for 4 days = $\frac{4 \times 7}{60} = \frac{7}{15}$

Work left = $\frac{7}{60} - \frac{7}{15} = \frac{7-28}{60} = \frac{-21}{60}$

$= \frac{7}{20}$

(C)

	Present	future
Person	$\frac{2}{5}x$	$\frac{2}{5}x+8$
Mother	x	$x+8$

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

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

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

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

$-x = -40$

Mother age = $x = 40$

(D)

A number is x

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

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

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

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

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

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

$$= \left(\frac{16}{15_5}x \times \frac{3\cancel{x}}{5\cancel{x}}\right) \times 100$$

$$= \frac{16}{25_1} \times 100^4$$

Error Percentage = 64%