Name : Sayed Faiz ali Shah

ID : 15247

Subject : Business mathematics

Course : MBA 90

Teacher : Sir Dr Liaqat Ali

Mid Term

Q 1 - i) (e) None of the above

Q1 - ii) (b) $\Delta x = 3$, $\Delta y = 11$

Q1 - iii) (d) None of them

Q1 - iv) (e) None of them

Q1 - v) (d) None of them

Q1 - vi) (e) None of them

Q1 - vii) (a) (-1, 1)

Q1 - viii) (e) None of them

Q1 - ix) (b) Linear Profit Function

Q1 - x) (e) None of them.

QNo 2:

(a) Bismark tractor

Cost = 4·50

Markup = 26%

(a) Selling Price = $4.50 \times 126\% = 5.67$

(c) Markup = $1.17 \quad (5.67 - 4.50)$

(b) Selling Price Percentage

$$\frac{1.17}{4.50} \times 100\% = 26\%$$

(b) $\left(\frac{x^2-9}{x+3}\right) \times \frac{4x-3}{2} = x$

$$= \frac{x^2-9}{x+3} = x \times \left(\frac{2}{4x-3}\right)$$

$$= \frac{x^2-3^2}{x+3} = \frac{2x}{4x-3}$$

$$= \frac{(x-3)(x+3)}{(x+3)} = \frac{2x}{4x-3}$$

$$x - 3 = \frac{2x}{4x-3}$$

$$(4x-3)(x-3) = 2x$$

$$4x^2 - 12x - 3x + 9 = 2x$$

$$4x^2 - 15x - 2x + 9 = 0$$

$$4x^2 - 17x + 9 = 0$$

$a = 4 \qquad b = -17 \qquad c = 9$

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

$$x = \frac{17 \pm \sqrt{(-17)^2 - 4(4)(9)}}{8}$$

$$= \frac{17 \pm \sqrt{289 - 144}}{8}$$

$$= \frac{17 \pm \sqrt{145}}{8}$$

$$= \frac{17 \pm 12.04}{8}$$

$$x = \frac{17 + 12.04}{8}, \frac{17 - 12.04}{8}$$

$$x = (3.63, 0.62)$$

Q No 8 (a)

Current Sum of ages = 60 years

Two year ago Sum of ages = 56 years

$56 \times \frac{3}{4} = 42$

$56 \times \frac{1}{4} = 14$

Two years ago age

Brother = 14 years

Sister = 42 years

Current age

Brother = 16 years

Sister = 44 years

(b) Selling Price = $18.75

Cost = $15

Mark up based on cost

$\Rightarrow 18.75 - 15 = 3.75$

Percent Markup based on cost

$\Rightarrow \frac{3.75}{15} \times 100$

$\Rightarrow .25 \times 100$

$\Rightarrow 25\%$

Q No 4:-

(a)

List Price = $150

Trade discount = 20%

Find the net cost

150 x 20% = 30

150 - 30 = 120 Ans

or

150 x 80% = 120 Ans

(b)

Total cost 1080

Total portions (Heat 3, Light 1) = 4

$\frac{1080}{4} = 270$

Heat = 270 x 3 = 810

Light = 270 x 1 = 270 Ans

QNo 5

(a) Let 1 boy alone can finish it in y days and 1 man can finish the work in x days.

Then

1 man 1 day work $= 1/x$

and

1 boy 1 day work $= 1/y$

(4 men 1 day work) + (6 boys 1 day work)

$= 1/5$

$= 4/x + 6/y = 1/5$

$4U + 6V = 1/5$ (where $1/x = U$ and $1/y = V$)

$= 4U + 6V = 1/5$ ——— (1)

again

(3 mens 1 day work) (4 boys 1 day work)

$= 1/7$

$3/x + 4/y = 1/7$

$3u + 4v = 1/7$ —— 2

on multiplying (1) by 3 and 2 by 4 we get

$12u + 18v = 3/5$ —— 3

and

$12u + 16v = 4/7$ —— 4

Sub 3 and 4 we get

$2v = (3/5 - 4/7)$

$2v = 1/35$

$v = 1/35 \times 2$

$v = 1/70$

$1/y = v$

$1/y = 1/70$

$y = 70$ days

Putting $V = 1/70$ in eq 1 We get.

$$4U + 6V = 1/5$$

$$4U = (1/5 - 6/V) \quad \text{(by putting V value 70)}$$

$$4U = (1/5 - 6/70)$$

$$4U = (14 - 6/70)$$

$$4U = (8/70)$$

$$U = 8/70 \times 1/4$$

$$U = 1/35$$

$$1/n = U$$

$$1/n = 1/35$$

$$x = 35$$

Therefor one man can alone finish the work in 70 days and one boy alone can finish the work in 35 days.

Q No 5

(b) List Price = 150

Trade discount = 20%

Find the cost:

~~150 - 20%~~

150 × 20% = 30

150 − 30 = 120

or

150 × 80% = 120