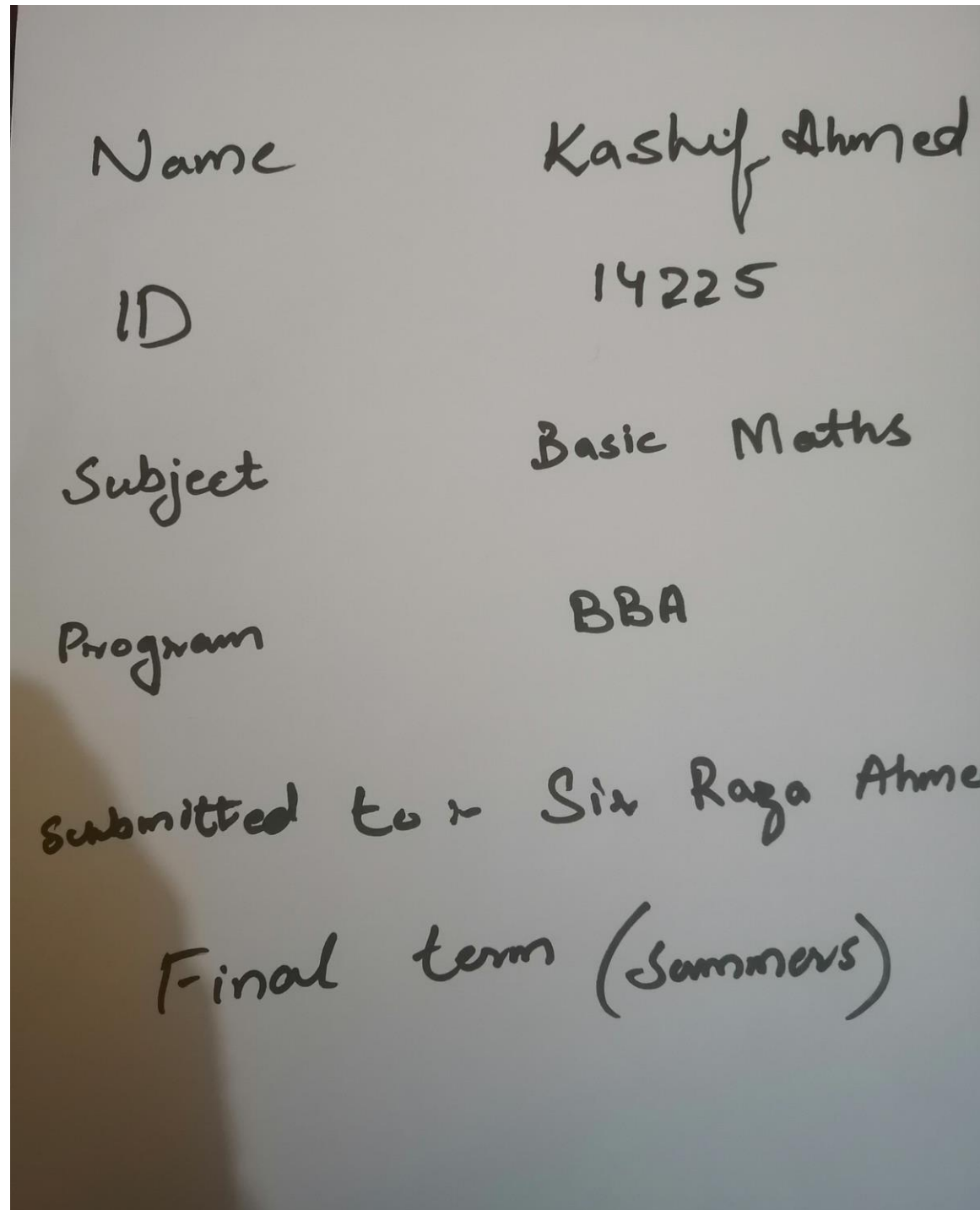


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14225

Basic Maths (Final Term Paper)

Submitted To Sir Raza Ahmed Khan



Question:- 1

Page:- 1

$$(c) \frac{x^3 + 6x^2 + 11x + 6}{(x+3)}$$

Solution:-

Recomming the expressions:-

$$= \frac{x^3 + x^2 + 5x^2 + 5x + 6x + 6}{x+3}$$

$$= \frac{x^2 x (x+1) + 5x x (x+1) + 6(x+1)}{x+3}$$

$$= \frac{(x+1) x (x^2 + 5x + 6)}{x+3}$$

$$= \frac{(x+1) x (x^2 + 3x + 2x + 6)}{x+3}$$

$$= \frac{(x+1) x (x \times (x+3) + 2(x+3))}{x+3}$$

$$= \frac{(x+1) x \cancel{(x+3)} x (x+2)}{\cancel{x+3}}$$

$$= (x+1) \times (x+2)$$

$$= x^2 + 3x + 2 \quad \text{Answer}$$

b) $6x^2 + 23x + 7$

Solution:-

$$6x^2 + 23x + 7$$

$$= 6x^2 + 2x + 21x + 7$$

$$= 2x(3x+1) + 7(3x+1)$$

$$= (2x+7)(3x+1) \quad \text{Answer}$$

(c)
Ans $\frac{4}{x+2} + \frac{7}{x^2+3x+2}$

$$= \frac{4}{x+2} + \frac{7}{x^2+2x+x+2}$$

$$= \frac{4}{x+2} + \frac{7}{x(x+2)+1(x+2)}$$

$$= \frac{4}{x+2} + \frac{7}{(x+2)(x+1)}$$

$$= \frac{4(x+1) + 7}{(x+2)(x+1)}$$

$$= \frac{4x + 4 + 7}{(x+2)(x+1)}$$

$$= \frac{4x + 11}{(x+2)(x+1)}$$

Answer.

Q

Q

2/
Question

(a) $\frac{27}{2}$

Solution:-

Into Decimals:-

$$= 13.5$$

Into Percentage:-

$$= 1350\%$$

(b) What percent of 450 is 18?

~~Ans~~ Solution:-

$$= \frac{18}{450} \times 100$$

$$= \frac{1800}{450}$$

$$= 4\%$$

Q2

(C)

Solution:-

Let the cost price of a product be rs = x

Then according to the given statement we have:-

$$\text{Gross profit} = \frac{2}{3} \times x = \frac{2}{3}x.$$

Since the selling price of the product is rs 1500, so we get

$$x + \frac{2}{3}x = 1500$$

$$\rightarrow \frac{5x}{3} = 1500$$

$$\rightarrow 5x = 4500$$

$$\rightarrow x = \frac{4500}{5}$$

$$\rightarrow x = 900$$

Q. 11

Cost of the product is RS 900.

Therefore the gross profit is

$$\frac{2}{3} \times 900 = 600$$

The Gross profit is 600 rs.

Ans

Q. 12

Solution

$$A = \begin{bmatrix} 2 & 4 & 7 \\ 5 & 3 & 1 \end{bmatrix}, B = \begin{bmatrix} 3 & 9 \\ 2 & 4 \end{bmatrix}$$

$$AB = \begin{bmatrix} 2 & 4 & 7 \\ 5 & 3 & 1 \end{bmatrix} \begin{bmatrix} 3 & 9 \\ 2 & 4 \end{bmatrix}$$

Not possible

AB and BA are not possible:
Because column and rows are not matched:-

Ans

(b)

1) Solution :-

$$\begin{vmatrix} 2 & 2 & 6 \\ -2 & 1 & 2 \\ 2 & 1 & 0 \end{vmatrix}$$

let

$$A = \begin{vmatrix} 2 & 2 & 6 \\ -2 & 1 & 2 \\ 2 & 1 & 0 \end{vmatrix}$$

$$= 2 \begin{vmatrix} 1 & 2 \\ 1 & 0 \end{vmatrix} - 2 \begin{vmatrix} -2 & 2 \\ 2 & 0 \end{vmatrix} + 6 \begin{vmatrix} -2 & 1 \\ 2 & 1 \end{vmatrix}$$

$$= 2(0-2) - 2(0-4) + 0$$

$$= 2(-2) - 2(-4)$$

$$= -4 + 8$$

$$\boxed{A = 4}$$

cos

2) solution:-

write in matrix form

$$\begin{bmatrix} 3 & 1 \\ 6 & -1 \end{bmatrix} = \begin{bmatrix} 5 \\ 6 \end{bmatrix}$$

$$\frac{|A_x|}{|A|}$$

$$|A| = \begin{vmatrix} 3 & 1 \\ 6 & -1 \end{vmatrix} = (3 \times -1) - (6 \times 1) \\ = -3 - 6 = -9.$$

$$|A_x| = \begin{vmatrix} 5 & 1 \\ 6 & -1 \end{vmatrix} = (5 \times -1) - (6 \times 1) \\ = -5 - 6 \\ = -11$$

$$|A_y| = \begin{vmatrix} 3 & 5 \\ 6 & 6 \end{vmatrix}$$

$$= (3 \times 6) - (6 \times 5)$$

$$= 18 - 30$$

$$|A_y| = -17$$

now

$$\frac{|A_x|}{|A|} = \frac{-11}{-9} = \frac{11}{9}$$

$$\frac{|A_y|}{|A|} = \frac{-17}{-9} = \frac{17}{9}$$

ans

24)

Solution:-

$$2x + y + z = 5 \quad \text{--- i}$$

$$3x - 2y - z = 11 \quad \text{--- ii}$$

$$3x + y + 2z = 11 \quad \text{--- iii}$$

add eq i and ii

$$2x + y + z = 5$$

$$3x - 2y - z = 11$$

$$5x - y = 16 \quad \text{--- iv}$$

Subtract eq i from iv

$$3x + y + 2z = 11$$

$$\oplus 2x \oplus y \oplus z = \oplus 5$$

$$x + z = 6 \quad \text{--- v}$$

sub eq iii from ii

$$3x - 2y - z = 11$$

$$\oplus 3x \oplus y \oplus 2z = \oplus 11$$

$$-3y - 3z = 0$$

$$= \frac{3y}{3} = \frac{3 \cdot 2}{3}$$

Page 10

$$-y = 2$$

OR

$$y = -2 \rightarrow \textcircled{\text{vi}}$$

So in eq v we can write $z = -y$

$$x - y = 6 \rightarrow \textcircled{\text{vii}}$$

Sub eq vii from iv.

$$\begin{array}{r} 5x - y = 16 \\ \oplus \quad x \ominus y = 6 \\ \hline 4x = 10 \\ \frac{4x}{4} = \frac{10}{4} \end{array}$$

$$x = \frac{5}{2}$$

Put $x = \frac{5}{2}$ in eq iv

$$\frac{5}{2} - y = 16$$

$$-y = 16 - \frac{5}{2}$$

$$-y = \frac{32 - 5}{2}$$

$$-y = \frac{27}{2}$$

$$y = \frac{-27}{2}$$

As we know $y = -2$

$$+\frac{27}{2} = +2$$

$$2 = \frac{27}{2} \quad \text{Answer}$$

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