Subject : Basic Mathematics

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 Q1. Transpose to make 𝒙 the subject:

1. 𝑦 = 3𝑥

Sol: y=3x

3x+y=0

xy= 3

X= 3y ans

1. 𝑦 = 1/𝑥

Sol: y=1/x

Xy=1

X=1y ans

 c. 𝑦= 7𝑥 – 5

sol: y=7x-5

x=2y ans

D.𝑦 = 1/2 𝑥 – 7

Sol: y=1/2x -7

X=1/2-7y

X=2/6y ans

**Q2. Solve the followings**

2: a. ½ x 3/2 (x-4) = 6

 -21x +12 = -6-3x

**Sol**~~:~~

* ~~2~~ x 1/~~2~~ x + 3/~~2~~ (x-4) ~~x2~~ =6x2

 -21x +12 = -6 -3x

* 1x + 3x -12=12

 =21x+3x=-6-12

* 4x = 12 +12

 -18 = -18

* X = ~~24~~ 6/~~4~~ 1

 X = -~~18~~ 1/-~~18~~ 1

* x= 6

 x=1 ans

**b: 4x ½ (2x-4) = 18**

**-1-7m = -8m+7**

Sol:

* 2 x 4x +1/2 (2x-4) = 18x2

 -1-7m = -8m+7

* 8x +1 (2x – 4)= 36

 -7m + 8m =7+1

* 10x = 36+4

 1m = 8

* 10x = 40

 1m = 8

* X = 40/10

 M = 8

* X = 4

 M = 8 ans

**Q3:**

**Sol: (i) 2x + y =2**

 **3x + 7y= 14**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 2 13 7 |  | Xy |  | 214 |

A xB

 X = B -1 B

|  |
| --- |
| 2 13 7 |

A =(2x7)(3x1) = 14 + 3 = 17 not equal to 0

A -1 = 1/17

[A]

|  |
| --- |
| 7 - 1-3 2 |

A -1= 1/17

|  |  |
| --- | --- |
| 7 - 1-3 2 | 214 |

A -1= 1/17 [ (7x2)(-1x14)]

 [(-3x2)(2x14 ]

A -1= 1/17

 [14 -14]

 [-6 28]

A -1= 1/17 =

|  |
| --- |
| 022  |

A -1 =

|  |  |
| --- | --- |
| 0/1722/17 | Xy |

 ans

(ii)

**Sol:**

 

**(iii)**

**Sol:**



**(iv)**

**Sol:**



**Question # 4**

**If A = [ 3 1] then find [A]**

 **[-2 3]**sol:

If A = [ 3 1] then find [A]

 [-2 3]

A= = [ 3 1]

 [-2 3]

A=(3x3)(-2x1)

 9-2#0

A -1 = 1/7

[A] = [ 3 -1]

 [+2 3] ans

**Question#5**

**Write each product as single matrix**

1)

|  |
| --- |
|  1 -11. 2

1 0 |

 [3 1 -1]

[0 -1 2]

**Sol:**

|  |
| --- |
|  1 -11. 2

1 0 |

 [3 1 -1]

 [0 -1 2]

[(3x1)(1x0)(1x1)]

[(3x-1)(1x2)(-1x0)]

 [3 0 -1]

[-0 -2 0] ans

|  |
| --- |
| 12 -2 |

**Ii)** [3 -2 2]

Sol:

|  |
| --- |
| 12 -2 |

 [3 -2 2]

[(3x1)(-2x2)(2x-2)]

[3 -4 -4] ans

|  |  |
| --- | --- |
| 2 -2 -11 1 -21 0 -1 | 1 -2 5-1 - 1 3-1 -2 4 |

**(iii)**

Sol:

|  |  |
| --- | --- |
| 2 -2 -11 1 -21 0 -1 | 1 -2 5-1 - 1 3-1 -2 4 |

|  |
| --- |
| (2x-1) (-2x-1) (-1x-1)(1x-2) (1x-1) (-2x-2)(1x5) (0x3) (-1x4)  |

|  |
| --- |
| -2 +2 +1-2 -1 +4 5 0 -4  |

 Ans

(iv)

|  |
| --- |
| -1 -2 5-1 -1 3 -1 -2 4  |

|  |
| --- |
| 2 -2 - 11 1 -2 1 0 -1 |

Sol:

|  |
| --- |
| -1 -2 5-1 -1 3 -1 -2 4  |

|  |
| --- |
| 2 -2 - 11 1 -2 1 0 -1 |

=

|  |
| --- |
| (-1x2) (-2x1) ( 5x1)-1x-2) (-1x1) (3x0)(-1x1) (-2x-2) (4x-1)  |

|  |
| --- |
| -2 -2 5+2 -1 0+1 +4 -4  |

**Question #6**

If A [1 4] B=[-3 2] c=[1 0]

 [2 1] [4 0[ [0 2]

Sol:

 A = [1 4] B=[-3 2] c=[1 0]

 [2 1] [4 0[ [0 2]

 Find A 2 +BC

A= [1 4] x A= [1 4]

 [2 1] [2 1]

|  |
| --- |
| (1x1) 4x2)(2x4) (1x1)  |

A 2=

|  |
| --- |
| 1 88 1 |

B=[-3 2] x c= [1 0]

 [4 0] [0 2]

|  |
| --- |
| (-3x1) (2x0)(4x0) (0x2)  |

BC

|  |
| --- |
| -3 00 0 |

BC

|  |
| --- |
| 1 88 1 |

|  |
| --- |
| -3 00 0 |

A2 + BC =

 A2 + BC

 **ans**

question 7





