



# VIVEK TUTORIALS

## Practice Test

Std: SSC (E.M)

Subject: Mathematics I

Time: 45Min

Date : 07/Jun/2019

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Max Marks: 20

### Q.1 (A) Choose the correct alternative:

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- (1) For what value of 'k',  $2x + ky + 14 = 0$  have  $-2$  as its y- intercept?  
(a) 0 (b)  $-1$  (c) 1 (d) 2
- (2) Aruna has only Re1 and Re 2 coins in her piggy bank. If the total number of coins is 50 and the coins amount to Rs. 75. If 'x' be the number of Re1 coins and 'y' be the number of Re 2 coins, the equations so formed for the conditions are:  
(a)  $x + 2y = 50$  ;  $x + y = 75$   
(b)  $x + y = 50$  ;  $x + 2y = 75$   
(c)  $x + y = 75$  ;  $x + y = 50$   
(d)  $x - y = 50$  ;  $x + 2y = 75$
- (3) Arranging equation  $x + 5 = -14y$  in standard form  $ax + by + c = 0$  we get  $b =$  \_\_\_\_\_.  
(a) 14 (b)  $-14$  (c) 5 (d) 1
- (4) Graph of every linear equation in two variables represents a  
(a) Straight line (b) Point (c) Line (d) Ray

### (B) Solve the following:

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- (1) Complete the following table to draw the graph of  $2x - 6y = 3$

x	-5	<input type="text"/>
y	<input type="text"/>	0
(x, y)	<input type="text"/>	<input type="text"/>

- (2) Find the value of the following determinant.

$$\begin{vmatrix} -8 & -3 \\ 2 & 4 \end{vmatrix}$$

- (3) Find the value of the following determinant.

$$\begin{vmatrix} -1 & 7 \\ 2 & 4 \end{vmatrix}$$

**Q.2(A) Complete the following activities:**

(1) Solve the following simultaneous equations.

$$5x + 2y = -3; x + 5y = 4$$

Here the equations are

$$5x + 2y = -3 \dots (I)$$

$$x + 5y = 4 \dots (II)$$

Both the variables are having different coefficients, first make the coefficient same.

Multiply equation (II) by '5' as

$$5x + 25y = 20 \dots (III)$$

As the sign of '5x' in the equations (II) and (III) is same, proceed as subtracting equation (II) and (III)

$$\begin{array}{r} 5x + 2y = -3 \\ 5x + 25y = 20 \\ \hline - \quad - \quad = \quad - \\ \hline \boxed{\phantom{00}} = \boxed{\phantom{00}} \end{array}$$

$$y = \frac{\boxed{\phantom{00}}}{(-23)}$$

$$y = \boxed{\phantom{00}}$$

Place  $y = 1$  in equation (II) and obtain the value of 'x'

$$x + 5 \times 1 = \boxed{\phantom{00}}$$

$$x + 5 = 4$$

$$x = 4 - 5$$

$$x = \boxed{\phantom{00}}$$

$$\therefore \text{Solution is } (x, y) = \boxed{\phantom{00}}$$

(2) Solve :  $3x + 2y = 29; 5x - y = 18$

$$3x + 2y = 29 \dots (I) \text{ and } 5x - y = 18 \dots (II)$$

Let's solve the equations by eliminating 'y'. Fill suitably the boxes below

Multiplying equation (II) by 2.

$$\therefore 5x \times \boxed{\phantom{00}} - y \times \boxed{\phantom{00}} = 18 \times \boxed{\phantom{00}}$$

$$\therefore 10x - 2y = \boxed{\phantom{00}} \dots (III)$$

Let's add equations (I) and (III)

$$\begin{array}{r} 3x + 2y = 29 \\ + \boxed{\phantom{00}} - \boxed{\phantom{00}} = \boxed{\phantom{00}} \\ \hline \boxed{\phantom{00}} = \boxed{\phantom{00}} \end{array} \therefore x = \boxed{\phantom{00}}$$

Substituting  $x = 5$  in equation (I)

$$3x + 2y = 29$$

$$\therefore 3 \times \boxed{\phantom{00}} + 2y = 29$$

$$\therefore \boxed{\phantom{00}} + 2y = 29$$

$$\therefore 2y = 29 - \boxed{\phantom{00}}$$

$$\therefore 2y = \boxed{\phantom{00}} \therefore y = \boxed{\phantom{00}}$$

$(x, y) = (\boxed{\phantom{00}}, \boxed{\phantom{00}})$  is the solution.

**(B) Solve the following:**

(1) Draw graph of  $2x - y = 4$ .

(2) Solve the following simultaneous equations graphically.

$$x + y = 5 ; x - y = 3$$

----- All the Best -----