

	<b>SUCCESS KEY TEST SERIES</b> X (English) <b>(Worksheet -1 Math-1 Ch 1 &amp; 2)</b> Mathematics Part - I-	DATE: _____
		TIME: 1 hrs
		MARKS: 20
	SEAT NO: <span style="border: 1px solid black; display: inline-block; width: 15px; height: 15px;"></span> <span style="border: 1px solid black; display: inline-block; width: 15px; height: 15px;"></span> <span style="border: 1px solid black; display: inline-block; width: 15px; height: 15px;"></span> <span style="border: 1px solid black; display: inline-block; width: 15px; height: 15px;"></span> <span style="border: 1px solid black; display: inline-block; width: 15px; height: 15px;"></span> <span style="border: 1px solid black; display: inline-block; width: 15px; height: 15px;"></span>	

**Q.1 (A) Choose the correct alternative. (2)**

- 1) Factorisation of  $x^2 - 4x - 12$  is  
 a.  $(x + 6)(x - 2)$       b.  $(x - 6)(x + 2)$       c.  $(x - 6)(x - 2)$       d.  $(x + 6)(x + 2)$
- 2) On comparing  $6x^2 + 11x - 35 = 0$  with  $ax^2 + bx + c = 0$ . We get a, b and c as :  
 a.  $a = 11, b = 6, c = 35$       b.  $a = 6, b = 11, c = 35$   
 c.  $a = 6, b = 11, c = -35$       d.  $a = 35, b = 11, c = -35$

**B) Solve the following questions. (Any one) (2)**

- 1) Find the values of each of the following determinants.

$$\begin{vmatrix} 5 & -2 \\ -3 & 1 \end{vmatrix}$$

- 2) Solve the following equations.  $5x^4 - 22x^2 + 8 = 0$

**Q.2 A) Complete the following Activities. (Any two) (4)**

- 1) If one root of the quadratic equation  $5m^2 + 2m + k = 0$  is  $-\frac{7}{5}$  then find the value of k by completing the following activity.

$-\frac{7}{5}$  is the root of equation  $5m^2 + 2m + k = 0$

$\therefore -\frac{7}{5}$  satisfies the given equation.

Substituting  $m = -\frac{7}{5}$  in given equation.

$$\therefore 5 \times \underline{\hspace{2cm}} + 2 \times \underline{\hspace{2cm}} + k = 0$$

$$\therefore \underline{\hspace{2cm}} + \underline{\hspace{2cm}} + k = 0$$

$$\therefore \underline{\hspace{2cm}} + k = 0$$

$$\therefore k = \underline{\hspace{2cm}}$$

- 2) Fill in the gaps and complete

$2x^2 - 4x - 3 = 0$	→	$\alpha + \beta = \dots\dots$
	→	$\alpha \times \beta = \dots\dots$

- 3) Find the values of following determinants.

$$\begin{vmatrix} \frac{7}{3} & \frac{5}{3} \\ \frac{3}{2} & \frac{1}{2} \end{vmatrix}$$

$$= \left( \frac{7}{3} \times \frac{1}{2} \right) - \underline{\hspace{2cm}}$$

$$= \frac{7}{6} - \frac{15}{6}$$

$$= \underline{\hspace{2cm}}$$

$$= \underline{\hspace{2cm}}$$

$$= \underline{\hspace{2cm}}$$

**B) Solve the following questions. (Any one)**

**(2)**

- 1) Find the value of k for which the given simultaneous equations have infinitely many solutions:  
 $kx + 2y = k - 2$ ;  $8x + ky = k$ .
- 2) Form the quadratic equation from its roots.  
 $1 - 3\sqrt{5}$  and  $1 + 3\sqrt{5}$

**Q.3 Solve the following questions. (Any one)**

**(3)**

- 1) Sum of the present ages of Manish and Savita is 31. Manish's age 3 years ago was 4 times the age of Savita. Find their present ages.
- 2) Solve quadratic equations using formula.  $25x^2 + 30x + 9 = 0$

**Q.4 Solve the following questions. (Any one)**

**(4)**

- 1) Two years ago, my age was  $4\frac{1}{2}$  times the age of my son. Six years ago, my age was twice the square of the age of my son. What is the present age of my son?
- 2) Solve the following equations by Cramer's method.  
 $6x - 3y = -10$ ;  $3x + 5y - 8 = 0$

**Q.5 Solve the following questions. (Any one)**

**(3)**

- 1) The length (in meters) of the sides of a triangle are  $2x + \frac{y}{2}$ ,  $\frac{5x}{3} + y + \frac{1}{2}$  and  $\frac{2}{3}x + 2y + \frac{5}{2}$ . If the triangle is equilateral, find its perimeter.
- 2) Solve the following problems using two variables :  
The sum of two numbers is 60. The greater number is 8 more than thrice the smaller number. Find the numbers.