

Q.1 Give the answers of following:

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1. Solve for the x by quadratic equation.

$$(x+1)(x+2)(x+3)(x+4)+1=0$$

2. Solve for x.

$$9^{x+2} - 6.3^{x+1} + 1 = 0$$

3. Solve the following system of equation using Cramer's rule.

$$5x - 3y = 1$$

$$6x - y = 9$$

4. Solve by Sarrus method.

$$D = \begin{vmatrix} 2 & -1 & 3 \\ 4 & 1 & 2 \\ 1 & -1 & 5 \end{vmatrix}$$

5. Transform the following angles to degree measures.

a) $\frac{13\pi}{6}$

b) $\frac{\pi}{12}$

Q.2 Attempt the following: [Any Two]

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1. Solve the following system using inverse of a matrix method.

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

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

$$2x - y + z = 2$$

2. Prove that.

$$\cos \frac{19\pi}{6} \cdot \sin \frac{17\pi}{6} - \sin \frac{11\pi}{6} \cdot \cos \frac{13\pi}{6} = 0$$

3. Prove that.

$$\frac{\tan \theta + \sec \theta - 1}{\tan \theta + \sec \theta + 1} = \frac{\sec \theta + 1}{\cos \theta}$$