

MA 341 – Review Assignment 6

Question 1

Solve the system of equations, if possible. Use either substitution or elimination. Verify your solution using a graphing utility.

$$\begin{cases} 2x + y = 1 \\ 4x + 2y = 3 \end{cases}$$

Question 2

Solve the system of equations, if possible. Use either substitution or elimination. Verify your solution using a graphing utility.

$$\begin{cases} 2x - y = 0 \\ 3x + 2y = 9 \end{cases}$$

Question 3

Solve the system of equations, if possible.

$$\begin{cases} x - 2y + 3z = 7 \\ 2x + y + z = 4 \\ -3x + 2y - 2z = -22 \end{cases}$$

Question 4

Solve the system of equations, if possible.

$$\begin{cases} 2x - 2y + 3z = 6 \\ 4x - 3y + 2z = 0 \\ -2x + 3y - 7z = 1 \end{cases}$$

Question 5

Consider the following matrix.

$$\left(\begin{array}{cc|c} 1 & -3 & -2 \\ 4 & -5 & 5 \end{array} \right)$$

Perform the following row operation.

$$R_2 = -4r_1 + r_2$$

What matrix do you have after performing this row operation?

Question 6

Consider the following matrix.

$$\left(\begin{array}{ccc|c} 1 & -3 & 2 & -6 \\ 2 & -5 & 3 & -4 \\ -3 & -6 & 4 & 6 \end{array} \right)$$

Perform the following row operations.

$$R_2 = -2r_1 + r_2$$

$$R_3 = 3r_1 + r_3$$

What matrix do you have after performing these row operations?

Question 7

Find the value of this determinant by hand.

$$\begin{vmatrix} 9 & 4 \\ -1 & 3 \end{vmatrix}$$

Question 8

Find the value of this determinant by hand.

$$\begin{vmatrix} 6 & 7 & 5 \\ 1 & -1 & 5 \\ 1 & 2 & -2 \end{vmatrix}$$

Question 9

Find the value of this determinant by hand.

$$\begin{vmatrix} 2 & -9 & 4 \\ 1 & 4 & 0 \\ 3 & -3 & 1 \end{vmatrix}$$

Question 10

Solve for x .

$$\begin{vmatrix} x & x \\ 4 & 3 \end{vmatrix} = 5$$