

## HOMEWORK SET 1

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You must show all work to get full credit. You can use a calculator to check your work.

**Problem 1.** Find the solution to the system of equations below using the substitution method

$$\begin{cases} 2x + 3y = 8 \\ x + 7y = 15 \end{cases}$$

**Problem 2.** Find the solution to the system of equations below by finding the reduced row echelon of the augmented matrix of system of equations.

$$\begin{cases} 4x + 7y = 56 \\ 2x + 3y = 30 \end{cases}$$

**Problem 3.** Let the reduced row echelon form of  $A$  be

$$\left( \begin{array}{cc|c} 1 & 0 & -3 \\ 0 & 1 & 4 \end{array} \right).$$

Determine  $A$  if the first and last columns of  $A$  are

$$\begin{pmatrix} 1 \\ 2 \end{pmatrix} \text{ and } \begin{pmatrix} 5 \\ 6 \end{pmatrix}.$$

**Problem 4.** Let the reduced row echelon form of  $A$  be

$$\left( \begin{array}{cc|c} 1 & 0 & 4 \\ 0 & 1 & 3 \end{array} \right).$$

Determine  $A$  if the first and second columns of  $A$  are

$$\begin{pmatrix} 1 \\ -2 \end{pmatrix} \text{ and } \begin{pmatrix} -1 \\ 1 \end{pmatrix}.$$