WORKSHEET 1 NAME:

This Worksheet will collected at the end of your recitation section and will be graded on completeness. We will return your graded worksheet back to you during recitation next week.

Chapter 1. Systems of Linear Equations

Recall in lecture, we learned the following three elementary operations:

E1. Interchange two equations;

E2. Replace an equation by a nonzero multiple of itself;

E3. Replace one equation by the sum of that equation and a scalar multiple of another equation;

We also showed that performing any of these elementary operations to a system of linear equations gives an equivalent system of linear equations (that is, they have the same solution sets). Using **only** these three elementary operations, find all solutions to the following systems of linear equations. Explain what operation you used on every step.

P1.

$$x + 2y - 3z = 0$$
$$2x - y + z = 0$$
$$3x - y + z = 4$$

P2.

$$x + 2y = -1$$
$$2x + y + z = 1$$
$$-x + y - z = -1$$

P3.

$$2x + y = 3$$

$$4x + y = 7$$

$$2x + 5y = -1$$

P4.

$$w + x + 2y + z = 1$$

$$w - x - y + z = 0$$

$$x + y = -1$$

$$w + x + z = 2$$