GUIDED NOTES – 7.2 SYSTEMS OF LINEAR EQUATIONS: THREE VARIABLES

LEARNING OBJECTIVES

In this section, you will:

- Solve systems of equations in three variables.
- Identify inconsistent systems of equations containing three variables.
- Express the solution of a system of dependent equations containing three variables.

SOLVING SYSTEMS OF EQUATIONS IN THREE VARIABLES

- Write out the 4 step process for solving for three unknowns, given a linear system of three equations.

  1.

  2.

  3.

  4.

Try It: Read Examples 2 and 3 in the text, then answer the following.

Solve the following system of equations in three variables.

$$2x + y - 2z = -1$$
$$3x - 3y - z = 5$$
$$x - 2y + 3z = 6$$

IDENTIFYING INCONSISTENT SYSTEMS OF EQUATIONS CONTAINING THREE VARIABLES

Try It: Read Example 4 in the text, then answer the following.

Solve the system of three equations in three variables.

$$x + y + z = 2$$
$$y - 3z = 1$$
$$2x + y + 5z = 0$$

EXPRESSING THE SOLUTION OF A SYSTEM OF DEPENDENT EQUATIONS CONTAINING THREE VARIABLES

Try It: Read Example 5 in the text, then answer the following.

Solve the following system.

$$x + y + z = 7$$
$$3x - 2y - z = 4$$
$$x + 6y + 5z = 24$$