

Math-08 Homework #15

Reading

- Text book section 5.1-5.3

Problems

- 1). Consider the following system of equations:

$$x^2 + y^2 - 4x - 6y - 12 = 0$$

$$x - y + 6 = 0$$

- a). Determine the points of intersection (if any).
- b). Give a geometric description of the problem - what are the geometric figures involved, what are the possibilities of intersection (there are three), and which of those possibilities is represented by the problem.
- 2). Solve the following system of linear equations:

$$3x + 3y + 5z = 1$$

$$3x + 5y + 9z = 0$$

$$5x + 9y + 17z = 0$$

You may use row operations directly on the equations, or use a matrix. For each step, clearly indicate the row operation used and state of the equations/matrix after the row operation.