

Major Topics

- Systems of Equations
- Solution of a System
- Systems of Inequalities
- Systems with 3 Variables

You should be able to:

- Find solutions of linear systems
- Solve systems algebraically and by graphing
- Solve systems with 3 variables
- Graph solution of system of inequalities
- Understand same line, parallel lines, intersecting lines
- Know when there are one, none, and many solutions

Classwork:

1) Solve the system algebraically. (**a** using substitution, **b** using linear combinations, and **c** your choice)

a) $\begin{cases} -3x + 2y = 8 \\ x + 2y = -8 \end{cases}$

b) $\begin{cases} 3x + 4y = -6 \\ 5x - 2y = 16 \end{cases}$

c) $\begin{cases} x - 2y = 4 \\ 3x + y = 5 \end{cases}$

2) Determine if there is one solution, no solution, or many solutions; and then whether the lines are parallel, intersecting, or the same line.

a) $\begin{cases} -4x + 2y = 8 \\ 8x - 4y = -16 \end{cases}$

b) $\begin{cases} 6x + 4y = -6 \\ 9x + 6y = 16 \end{cases}$

c) $\begin{cases} 4x - 2y = 14 \\ 3x + y = -7 \end{cases}$

3) Solve the system by graphing: $\begin{cases} -3x + 2y = 8 \\ x + 2y = -8 \end{cases}$

4) Solve the system of inequalities.

a) $\begin{cases} 2x - y \geq -3 \\ y > -\frac{1}{2}x + 1 \end{cases}$

b) $\begin{cases} 2x + 3y > 6 \\ x \geq -2 \\ y \leq 5 \end{cases}$

5) Solve the system algebraically: $\begin{cases} 2x - y + z = 4 \\ x + 3y - z = 11 \\ 4x + y - z = 14 \end{cases}$

Chapter 3 Review Homework

1) Solve the system algebraically using substitution.
$$\begin{cases} 4x - 7y = -19 \\ -2x - y = -13 \end{cases}$$

2) Solve the system using linear combinations.
$$\begin{cases} 6x + 5y = 17 \\ 5x - 2y = -29 \end{cases}$$

3) Solve using any method:
$$\begin{cases} 7x - 3y = 9 \\ 8x + 4y = -5 \end{cases}$$

4) Determine if there is one solution, no solution, or many solutions; and then whether the lines are parallel, intersecting, or the same line.

a)
$$\begin{cases} 2x + 3y = 4 \\ 4x + 6y = 10 \end{cases}$$

b)
$$\begin{cases} 2x - 4y = -8 \\ -3x + 6y = 12 \end{cases}$$

c)
$$\begin{cases} 2x + y = 7 \\ 3x - 2y = -14 \end{cases}$$

5) Solve the system by graphing:
$$\begin{cases} x + 2y = -2 \\ x - y = 4 \end{cases}$$

6) Solve the system of inequalities. Label the vertices.

a)
$$\begin{cases} 2x + 4y \leq 12 \\ -3x - 6y < -12 \end{cases}$$

b)
$$\begin{cases} y \leq -x + 4 \\ y \geq -1 \\ x > 2 \end{cases}$$

7) Solve the system algebraically:
$$\begin{cases} 2x - 3y + z = -13 \\ x + 3y - 2z = 4 \\ 3x - y - z = -13 \end{cases}$$