

Lesson #3 A: Understanding and Solving Systems of Inequalities with Two and Three Inequalities
(Reference: Lesson #43 in book)**Problem**

1. For each of the following systems of Inequalities, please determine whether the given point is a solution to the system of Inequalities or not. (SHOW ALL OF YOUR WORK.)

1. (2,5)

$$4x - 2y > -4$$

$$5x + y \leq 15$$

2. (1,2)

$$x - 3y \leq 7$$

$$-4x + 3y > 5$$

3. (3,-1)

$$5x - 3y \leq 9$$

$$-4x - 2y \geq 10$$

4. (1,-3)

$$3x + 5y \leq 4$$

$$2x - 6y > -11$$

5. For each of the following systems of inequalities with two inequalities, please solve the system by graphing method and expression the solution by shading the solution region. (SHOW ALL OF YOUR WORK.)

5. $-12x + 4y \leq 4$

$$-3x + 6y \geq 18$$

6. $4x + 6y > -12$

$$3x - 4y > -8$$

7. $-6x + 3y > 9$

$$8x - 4y < 16$$

8. $-6x + 2y \leq -4$

$$-3x - 9y < -27$$

9. $-8x + 4y > 4$
 $-9x + 3y \leq -9$

10. $-6x + 2y < 4$
 $-x + 3y \leq 30$

11. $-4x - 2y < 2$
 $-x + 5y \leq 20$

12. **For each of the following systems of inequalities with three inequalities, please solve the system by graphing method and expression the solution by shading the solution region. (SHOW ALL OF YOUR WORK.)**

12. $-6x + 3y < 3$
 $9x + 3y > -6$
 $y > 2$

13. $-12x + 4y \leq 4$
 $-3x + 6y \geq 18$
 $y < 7$

14. $2x + 3y \geq -6$
 $4x + 6y \leq 48$
 $6x + 9y \geq 27$

15. $6x + 2y > -4$
 $-4x + 2y < 2$
 $4x + 8y > 24$