Graphing Single Inequalities

_____ 1. Which inequality represents the graph to the right:

a. \( y \geq -\frac{1}{3}x + 2 \)

b. \( y < -\frac{1}{3}x + 2 \)

c. \( y \leq \frac{1}{3}x + 2 \)

d. \( y > \frac{1}{3}x + 2 \)

_____ 2. Which inequality represents the graph to the right:

a. \( y \leq -5 \)

b. \( y > -5 \)

c. \( x > -5 \)

d. \( x \leq -5 \)

Graph each inequality below:

3. \( x > -4 \)

4. \( 3x - y < -9 \)
Graphing Systems of Inequalities

Match each system of equations to its graph below.

5. \[ \begin{align*} y &\leq 7 \\ y &> 4 \end{align*} \]

6. \[ \begin{align*} x &< 7 \\ x &> 4 \end{align*} \]

7. \[ \begin{align*} x &< 7 \\ y &> 5 \end{align*} \]

Graph each system of linear inequalities below and shade the appropriate region.

8. \[ \begin{align*} y &> 1 \\ y &\leq x + 3 \end{align*} \]

9. \[ \begin{align*} 2x - y &\leq 6 \\ 2x + 3y &< -12 \end{align*} \]

10. \[ \begin{align*} x + 2y &< 6 \\ y &< -2x + 7 \\ y &\geq \frac{1}{4}(x - 2) - 1 \end{align*} \]
**Identify Solutions to Linear Systems**

11. Without graphing, determine if (-2, -3) is a solution to the following system.

   \[
   \begin{align*}
   x + y &< 4 \\
   y &\geq -5x - 2 \\
   y &\leq \frac{1}{2}(x - 2) + 4
   \end{align*}
   \]

   Answer ______________________

12. Which point is a solution to the system graphed below?

   a. (3, 2)  
   b. (-3, -2)  
   c. (4, -4)  
   d. (-2, 6)

   Answer: ______________________

13. Which point(s) are solutions to the system graphed below?

   A. (-2, -3)  
   B. (-1, 2)  
   C. (2, 1)  
   D. (-4, 0)

   Answer(s): ______________________
Writing Systems of Linear Inequalities

14. Write the system of 2 linear inequalities graphed below:

Answer ______________________
Answer ______________________

15. Write the system of 3 linear inequalities graphed below:

Answer ______________________
Answer ______________________
Answer ______________________

16. Write the system of 4 linear inequalities graphed below.

Answer ______________________
Answer ______________________
Answer ______________________
Answer ______________________