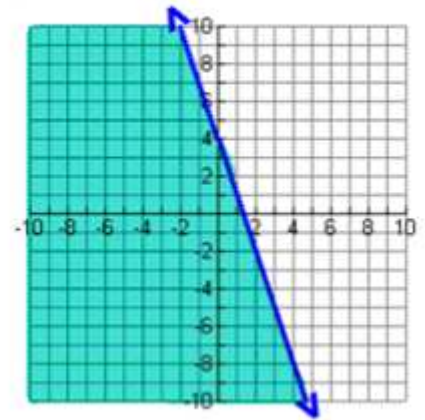# Systems of Inequalities Practice Test #1

Name: __Key__

Date _____ Block _____

Graphing Single Inequalities
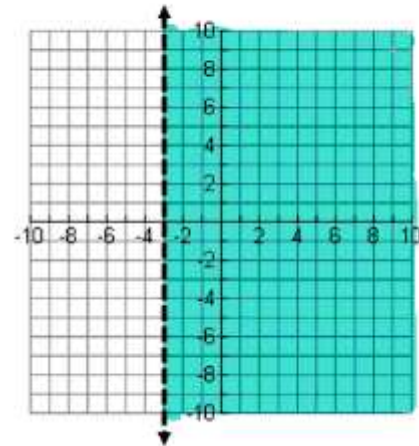
__B__ 1. Which inequality represents the graph to the right:

a. $y \geq 3x + 4$

b. $y \leq -3x + 4$ ⟵ (circled)

c. $y > -3x + 4$
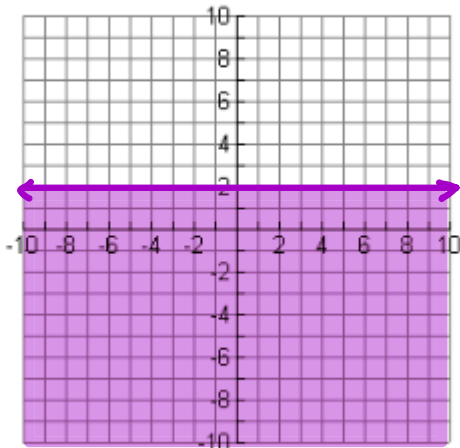
d. $y < 3x + 4$

__C__ 2. Which inequality represents the graph to the right:
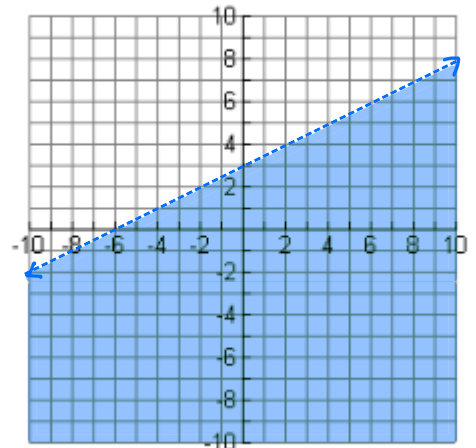
a. $y \leq -3$

b. $y > -3$

c. $x > -3$ ⟵ (circled)

d. $x \leq -3$

Graph each inequality below:
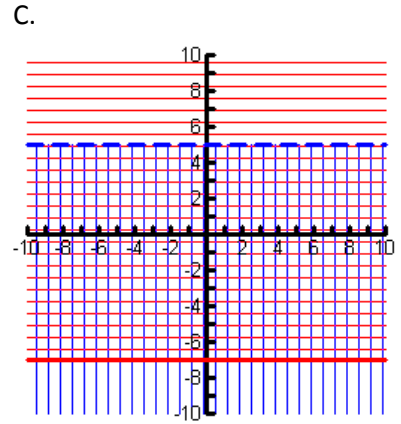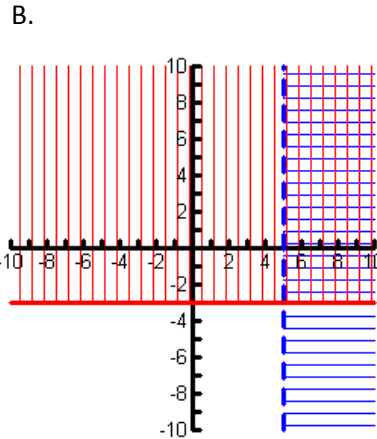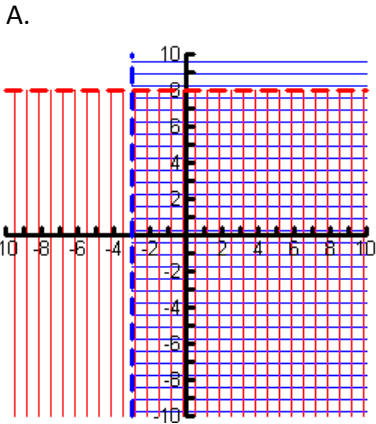
3. $y < 2$

4. $x - 2y < -6$

$-x \qquad -x$

$\dfrac{-2y}{-2} < \dfrac{-x}{-2} \dfrac{-6}{-2}$

$y > \dfrac{x}{2} + 3$

Graphing Systems of Inequalities

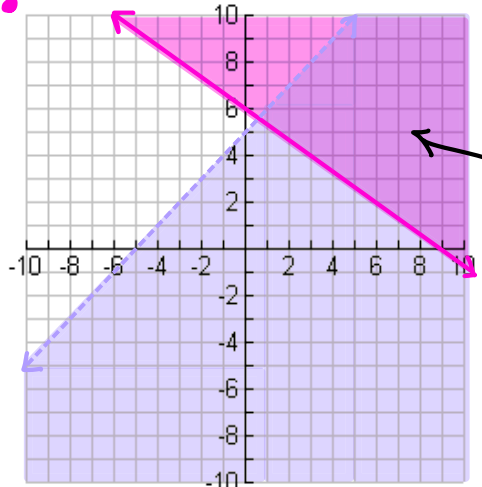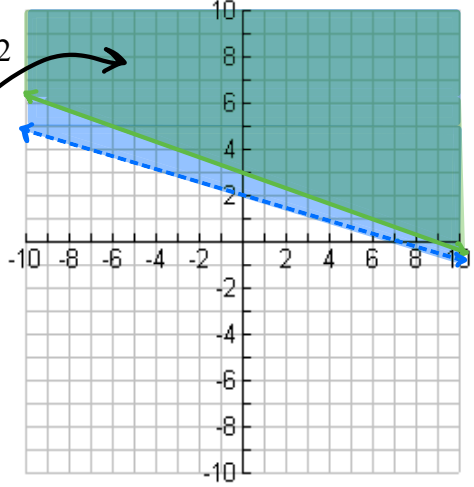Match each system of equations to its graph below.

A 5. $\begin{array}{l} y < 8 \\ x > -3 \end{array}$

C 6. $\begin{array}{l} y < 5 \\ y \geq -7 \end{array}$

B 7. $\begin{array}{l} y \geq -3 \\ x > 5 \end{array}$

A.

B.

C.

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

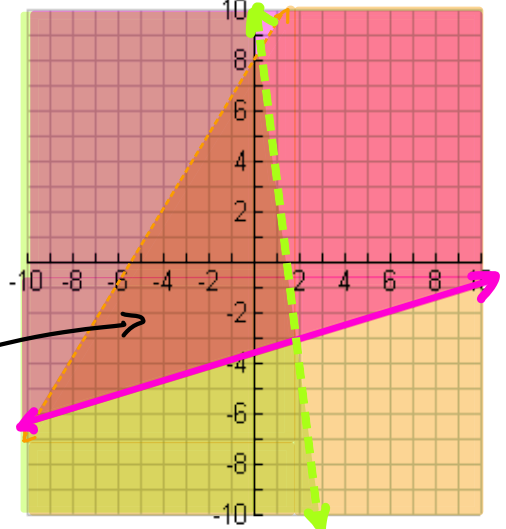8. $\begin{array}{l} y \geq \dfrac{-2}{3}x + 6 \\ y < x + 5 \end{array}$

9. $\begin{array}{l} 3x + 9y \geq 27 \\ -6x - 14y < -42 \end{array}$

Solutions

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

10. $\begin{array}{l} -6x + 4y < 32 \\ y \geq \dfrac{1}{4}(x - 2) - 3 \\ y < -7x + 10 \end{array}$

Solutions

Identify Solutions to Linear Systems

11. Without graphing, determine if (1, -4) is a solution to the following system.

Answer __YES__

$$y \geq \frac{1}{2}x - 6$$
$$-4 \geq \frac{1}{2}(1) - 6$$
$$-4 \geq -5\frac{1}{2}$$
TRUE

$$y \leq 3x$$
$$-4 \leq 3(1)$$
$$-4 \leq 3$$
TRUE

$$2x + y < 5$$
$$2(1) + (-4) < 5$$
$$2 - 4 < 5$$
$$-2 < 5$$
TRUE

$$y \geq \frac{1}{2}x - 6$$
$$y \leq 3x$$
$$2x + y < 5$$

12. Which point is a solution to the system graphed to the right?
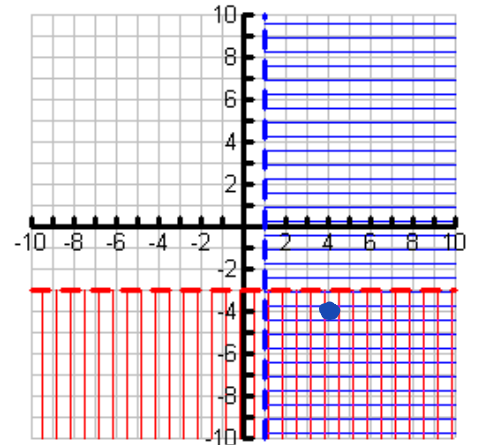
a. (4, 4)

b. (4, -4) ✓

c. (-4, -4)

d. (-4, 4)

Answer: __(4, -4)__

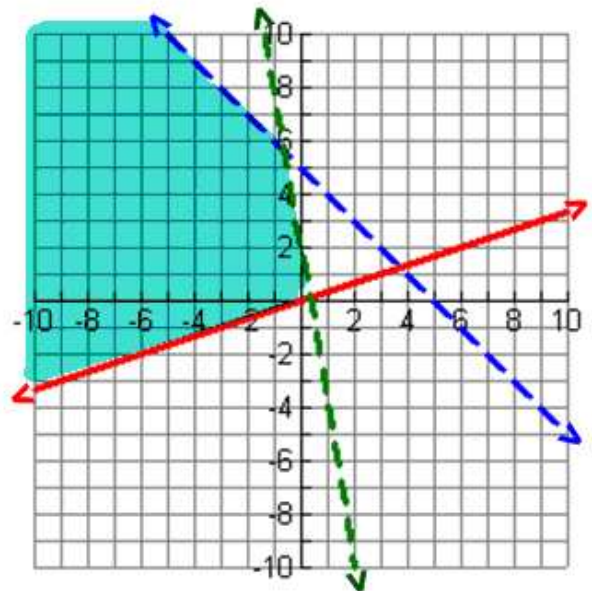13. Which point(s) are solutions to the system graphed to the right?
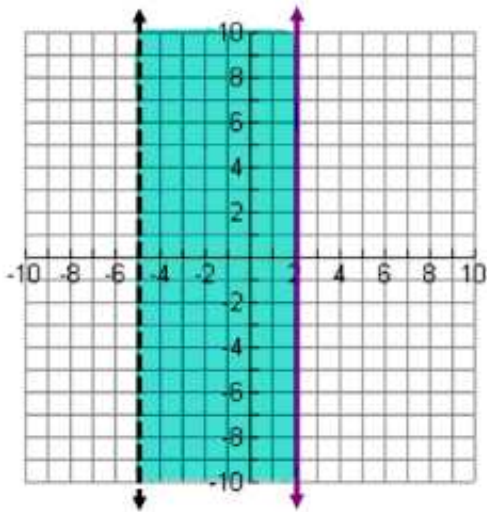
A. (-2, -3)

B. (-1, 1) ✓

C. (3, 1)

D. (-4, 0) ✓

Answer(s): __(-1, 1) and (-4, 0)__

Writing Systems of Linear Inequalities

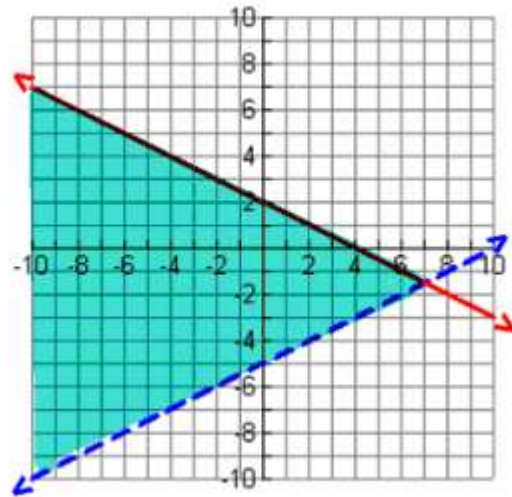14. Write the system of 2 linear inequalities graphed below:

Answer ___ $X \le 2$ ___

Answer ___ $X > -5$ ___

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

Answer ___ $y > 2X - 5$ ___

Answer ___ $y \le -\frac{1}{2}X + 2$ ___

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

Answer ___ $X \ge -6$ ___

Answer ___ $y < X + 5$ ___

Answer ___ $X \le 2$ ___

Answer ___ $y \ge X - 5$ ___