NAME _____ DATE _____

Module Test B

Module 10

1. Is (2, –3) a solution to the system of linear equations?

$\begin{cases} 2x + 3y = -5 \\ 3x - y = 9 \end{cases}$

yes

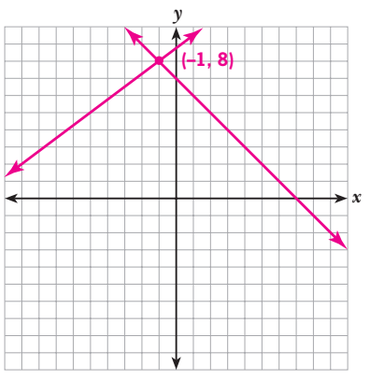
2. Is (3, –6) a solution to the system of linear equations?

$\begin{cases} 4x - y = 18 \\ x - 2y = -15 \end{cases}$

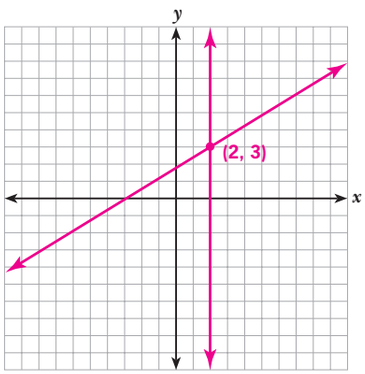
no

Solve each system of equations by graphing.

3. $\begin{cases} x + y = 7 \\ 3x - 4y = -35 \end{cases}$



4. $\begin{cases} x = 2 \\ 2x - 3y = -5 \end{cases}$



Solve each system of equations by elimination.

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

(1, –3)

6. $\begin{cases} 4x - y = 10 \\ -8x + 2y = -4 \end{cases}$

Inconsistent; no solution

Solve each system of equations by substitution.

7. $\begin{cases} 2x + y = 4 \\ 4x + 2y = 8 \end{cases}$

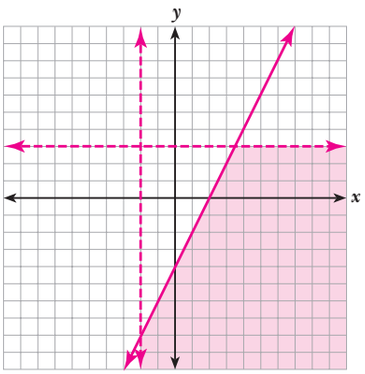
Dependent; infinite number of solutions

8. $\begin{cases} 2x - y = 1 \\ x - 2y = -1 \end{cases}$

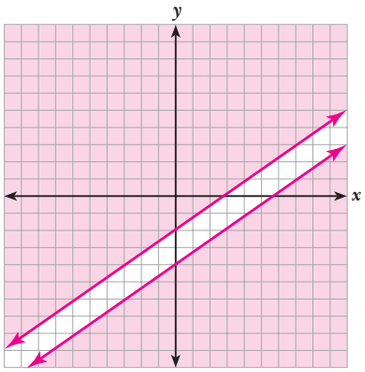
(1, 1)

Solve each system of linear inequalities.

9. $\begin{cases} y < 3 \\ x > -2 \\ 2x - y \geq 4 \end{cases}$



10. $\begin{cases} 2x - 3y \leq 6 \\ 2x - 3y \geq 12 \end{cases}$

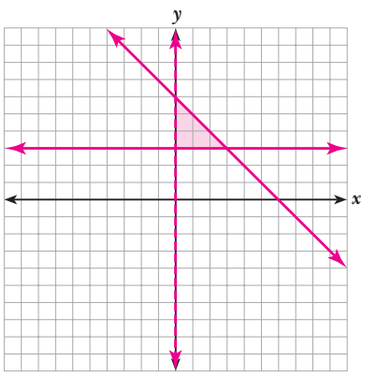


11. Joan invests $1,350. She receives $47.50 in interest payments in one year. She makes 3% interest on part of the money and 4% interest on the rest of the money. Write a system of equations to describe this situation. Solve the system of equations to find the amount of money invested at each rate of interest.

$\begin{cases} x + y = 1{,}350 \\ 0.03x + 0.04y = 47.5 \end{cases}$

$650, $700

12. Ferd wants to fence a rectangular vegetable garden he plans to build. The width of the garden should be at least 3 yards and the perimeter of the garden should be no more 12 yards. What are the possible dimensions of the garden?



13. Which point is not in the solution set of the system of inequalities?

$\begin{cases} 3x - y > 9 \\ x + y > 6 \end{cases}$

A. (12, 0) **B.** (9, 9) **C.** (8, 8) **D.** (–2, 12)

14. Suppose two linear equations are graphed on the same coordinate plane. If both equations form the parallel lines, which statement is false?

A. There are an infinite number of solutions.
B. There is no solution.
C. The solution is the empty set.
D. The system is inconsistent.

15. Answer the following questions in the space provided. Show all work. Be sure to label your responses (A), (B), and (C). Consider the following system of equations.

$$\begin{cases} 2x + 2y = 220 \\ x = 20 + y \end{cases}$$

A. Solve this system of equations by elimination.
B. Solve this system of equations by substitution.
C. Which method is better? Why?

A. $2x + 2y = 220$
$x - y = 20$

$2x + 2y = 220$
$2x - 2y = 40$
$4x = 260$
$x = 65$
$65 = 20 + y$
$45 = y$
$(65, 45)$

B. $2(20 + y) + 2y = 220$
$40 + 2y + 2y = 220$
$40 + 4y = 220$
$4y = 180$
$y = 45$
$x = 20 + 45$
$x = 65$
$(65, 45)$

C. Answers may vary. Accept any answer that is well supported.