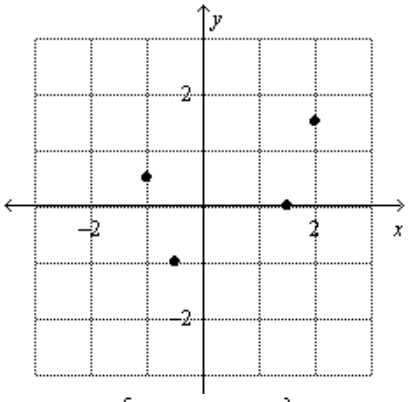
1 What is the graph of the relation? Find the domain and range.

$\left\{\left(-1, \frac{1}{2}\right), \left(-\frac{1}{2}, -1\right), \left(\frac{3}{2}, 0\right), \left(2, \frac{3}{2}\right)\right\}$

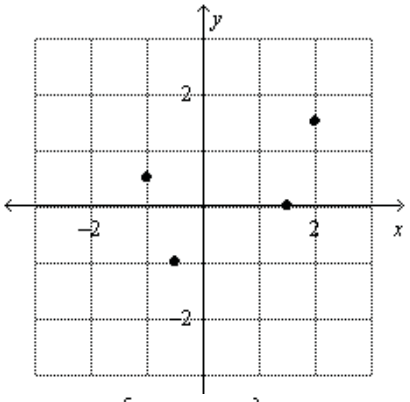
A



domain: $\left\{-1, -\frac{1}{2}, \frac{3}{2}, 2\right\}$

range: $\left\{-1, 0, \frac{1}{2}, \frac{3}{2}\right\}$

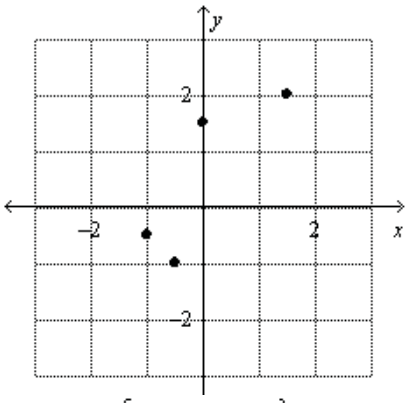
B



domain: $\left\{-1, 0, \frac{1}{2}, \frac{3}{2}\right\}$

range: $\left\{-1, -\frac{1}{2}, 2, \frac{3}{2}\right\}$

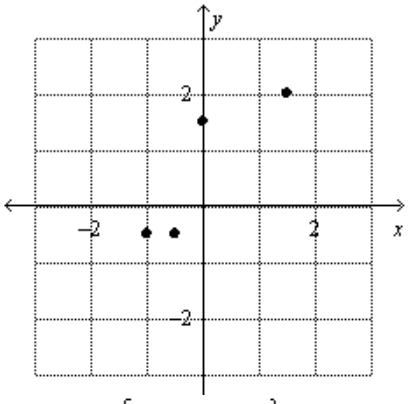
C



domain: $\left\{-1, -\frac{1}{2}, 2, \frac{3}{2}\right\}$

range: $\left\{-1, 0, \frac{1}{2}, \frac{3}{2}\right\}$

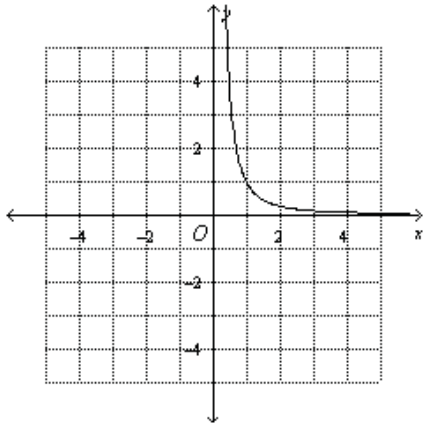
D



domain: $\left\{-1, 0, \frac{1}{2}, \frac{3}{2}\right\}$

range: $\left\{-1, -\frac{1}{2}, 2, \frac{3}{2}\right\}$

2 Find the domain and range of the relation and determine whether it is a function.



A Domain: all real numbers; range: all real numbers; yes, it is a function

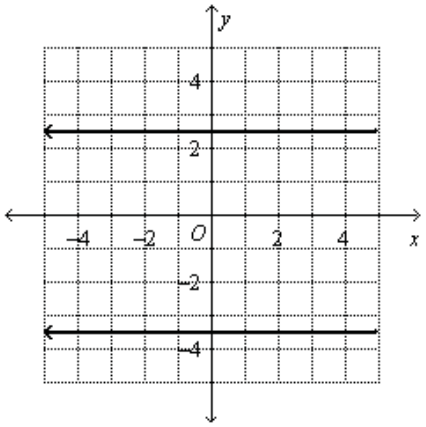
B Domain: $x > 0$; range: $y > 0$; yes, it is a function.

C Domain: positive integers; range: positive integers; no, it is not a function.

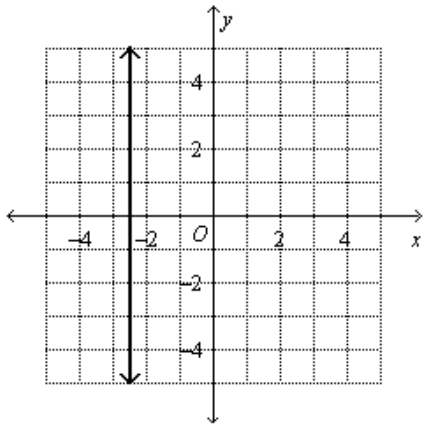
D Domain: $x \geq 0$; range: $y \leq 0$; no, it is not a function.

3 Use the vertical-line test to determine which graph represents a function.

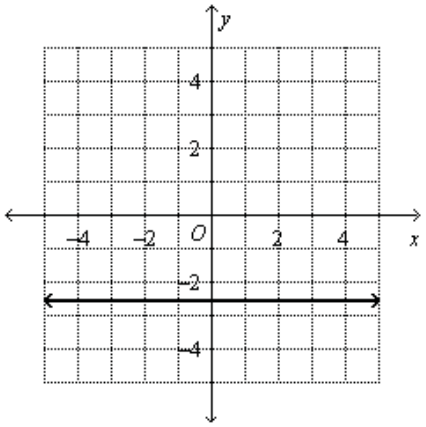
A



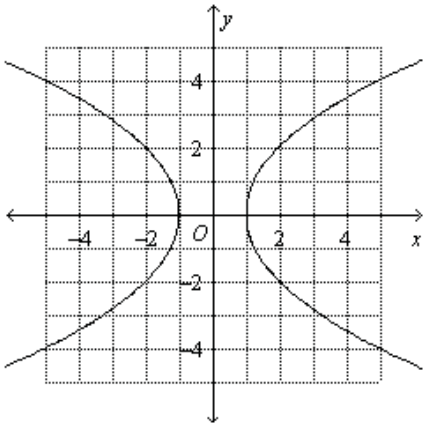
B



C



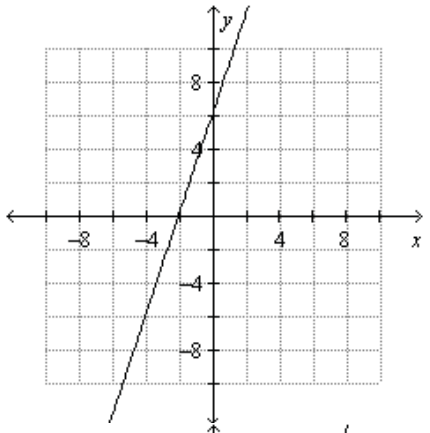
D



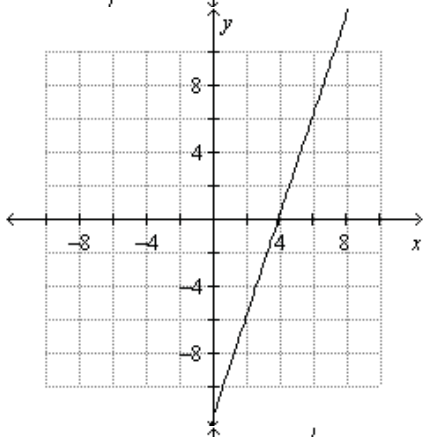
4 Identify the graph of the equation.

$y = 3(x - 3) + 3$

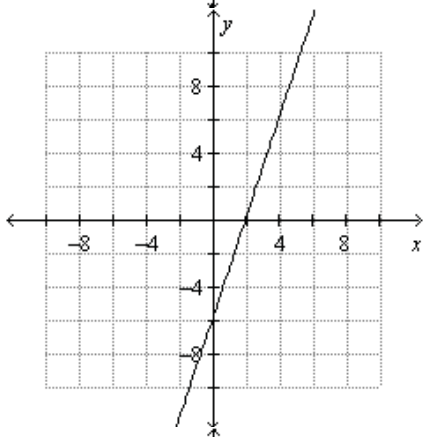
A



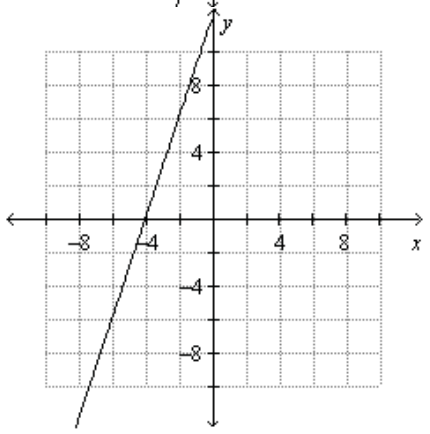
B



C

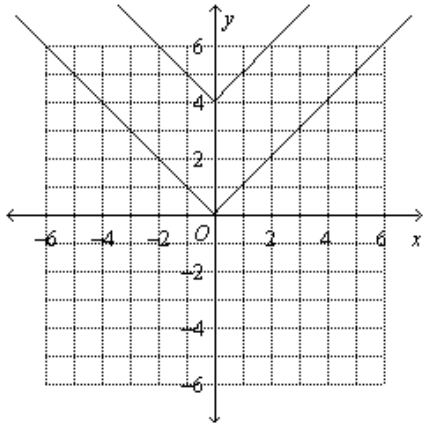


D



5 Choose the correct equation for the translation of the equation.

$y = |x|$



A $y = |x + 4|$

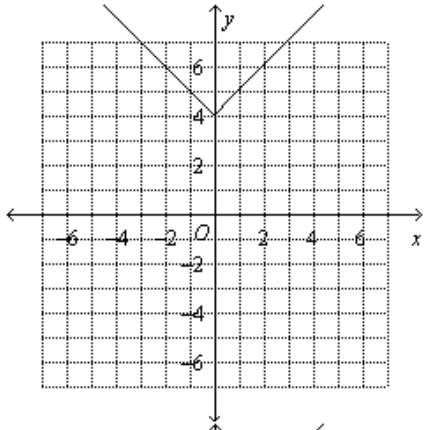
B $y = |x| + 4$

C $y = |x| - 4$

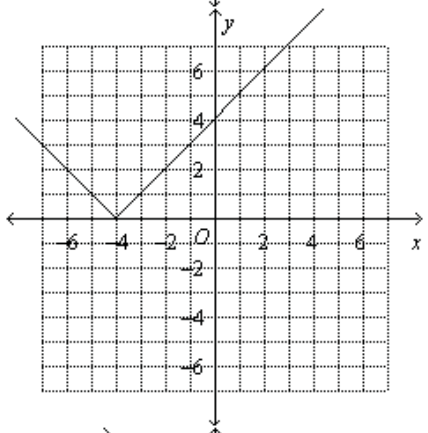
D $y = |x - 4|$

6 What is the graph of the equation $y = |x|$ translated 4 units up?

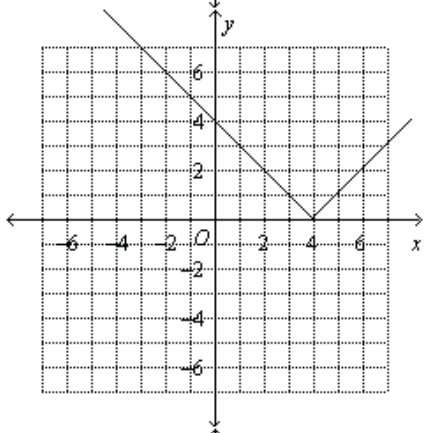
A



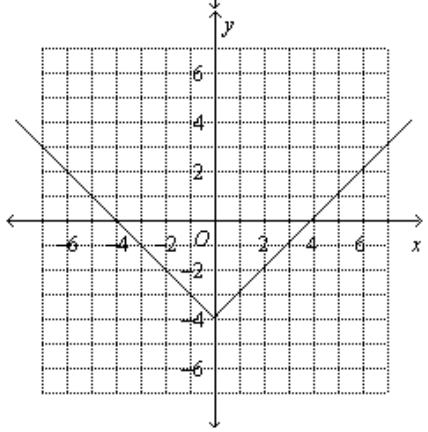
B



C



D



7 What is the equation for the graph obtained by stretching $y = x$ vertically by a factor of 4 and then translating it down 1 unit?

A $y = 4x - 1$

B $y = \frac{1}{4}x - 1$

C $y = \frac{1}{4}x + 1$

D $y = 4x + 1$

8 Choose an equation that represents the equation below translated 2 units down.

$y = -\frac{2}{9}|x| - 7$

A $y = -\frac{2}{9}|x| - 9$

B $y = -\frac{2}{9}|x| - 2$

C $y = -\frac{2}{9}|x| + 2$

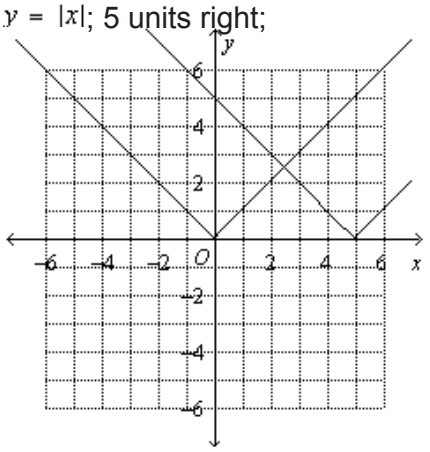
D $y = -\frac{2}{9}|x| + 9$

9 The equation describes a function that is translated from a parent function.

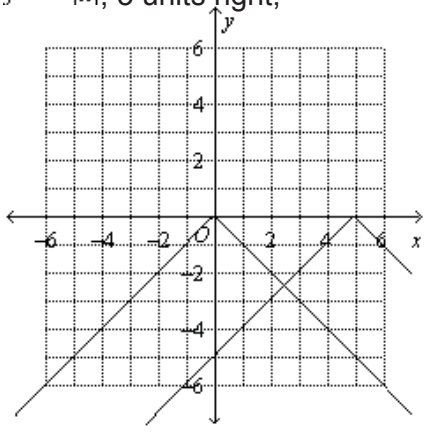
$y = -|x + 5|$

a.	Find the equation of the parent function.
b.	Find the number of units and the direction of translation.
c.	Choose the graphs of the two functions.

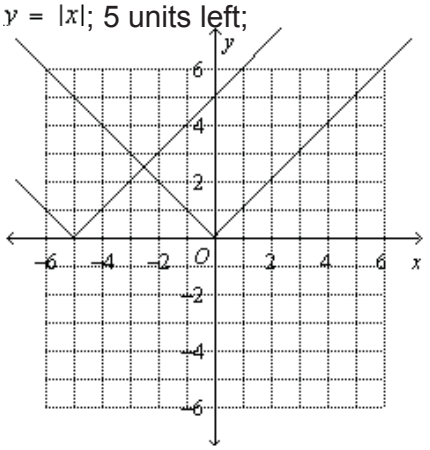
A $y = |x|$; 5 units right;



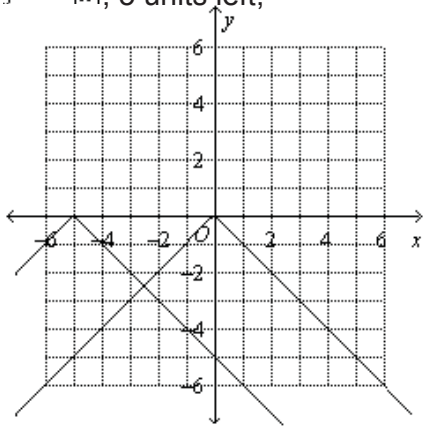
B $y = -|x|$; 5 units right;



C $y = |x|$; 5 units left;



D $y = -|x|$; 5 units left;



10 Choose the translation equation when you translate the equation below left 1 unit and up 2 units.

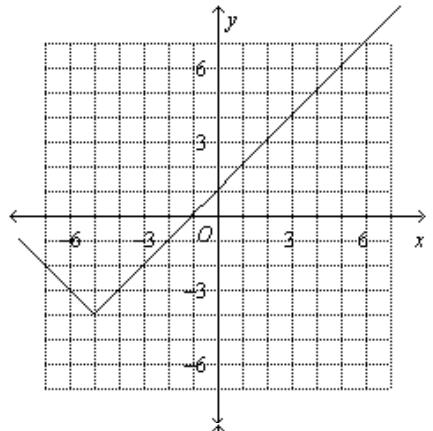
$y = |x|$

A $y = |x - 2| - 1$
B $y = |x + 1| + 2$
C $y = |x - 1| + 2$
D $y = |x + 2| - 1$

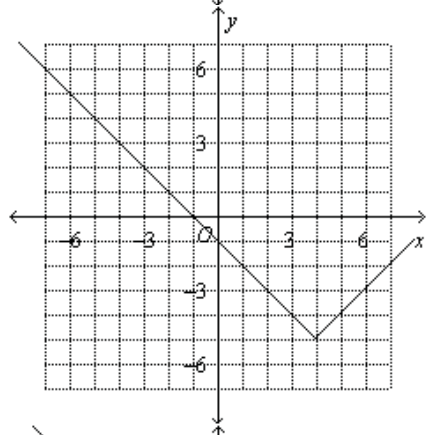
11 Choose the graph of the function.

$y = |x - 5| - 4$

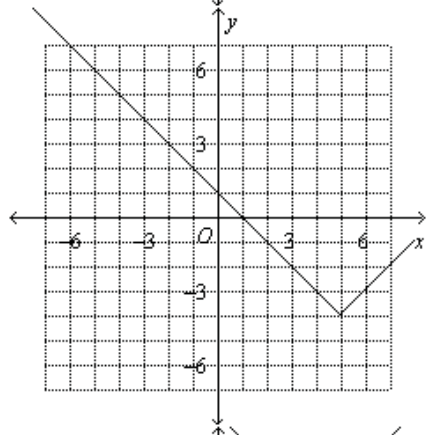
A



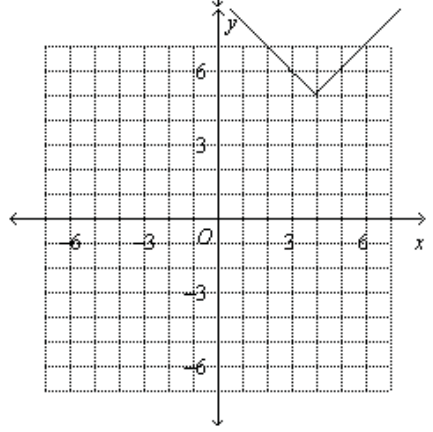
B



C



D



12 What is the vertex of the graph of the function?

$y = |-3x + 2| - 4$

A $(-\frac{2}{3}, -4)$

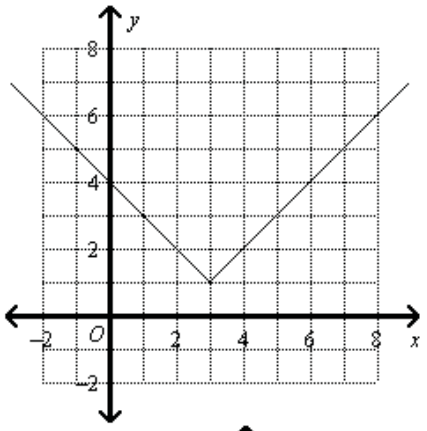
B $(\frac{2}{3}, -4)$

C $(\frac{2}{3}, 4)$

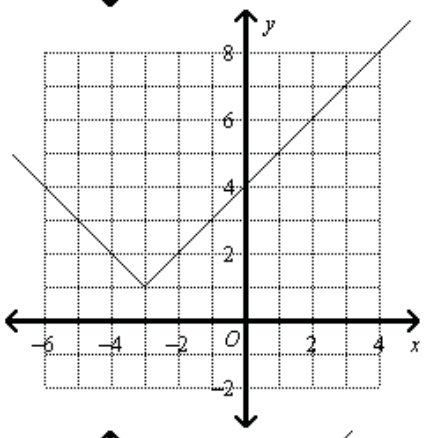
D $(-\frac{2}{3}, 4)$

13 What is the graph of $y = |x + 1| - 3$?

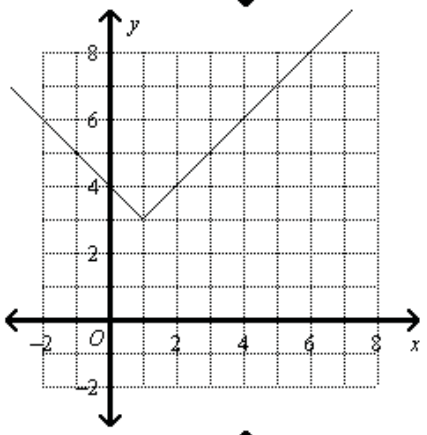
A



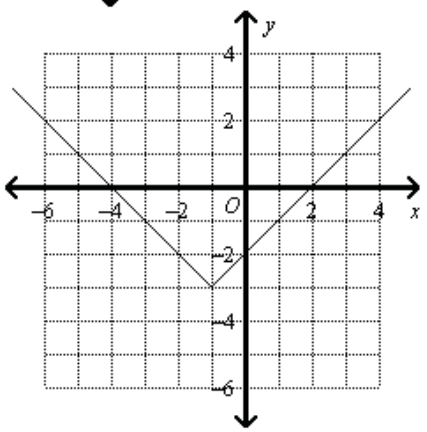
B



C

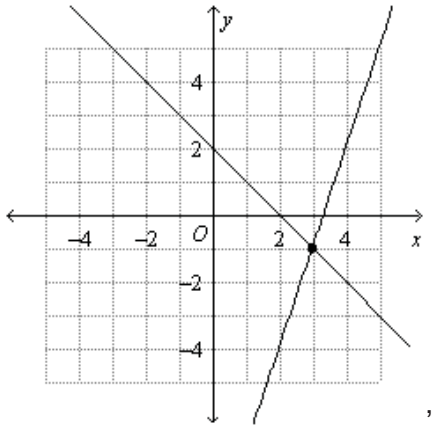


D

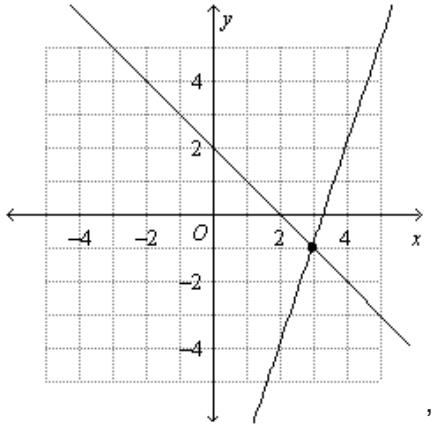


14 Choose the correct graph of the system. Identify the solution(s).

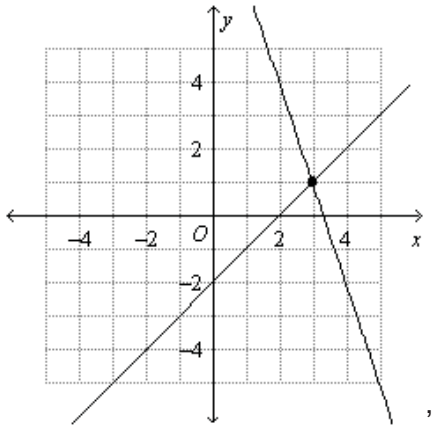
$$\begin{cases} -3x - y = -10 \\ 4x - 4y = 8 \end{cases}$$

A 

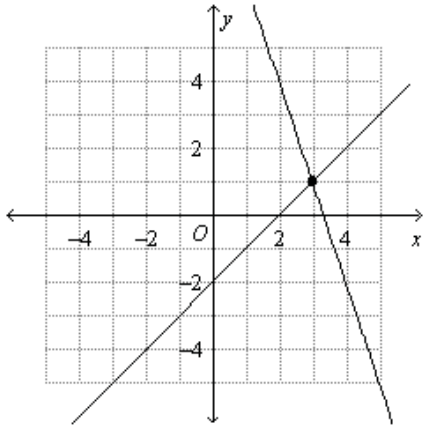
, solution: (–1, 3)

B 

, solution: (3, –1)

C 

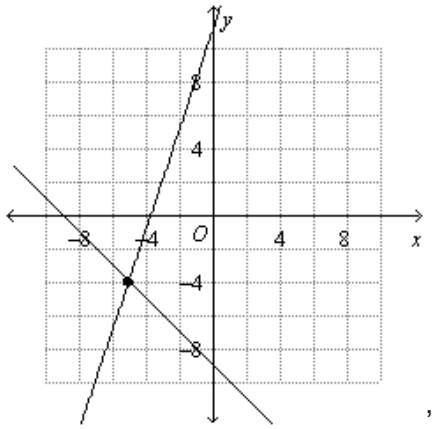
, solution: (1, 3)

D 

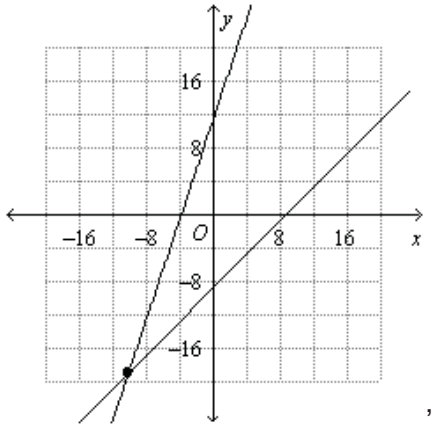
, solution: (3, 1)

15 Choose the correct graph of the system. Identify the solution(s).

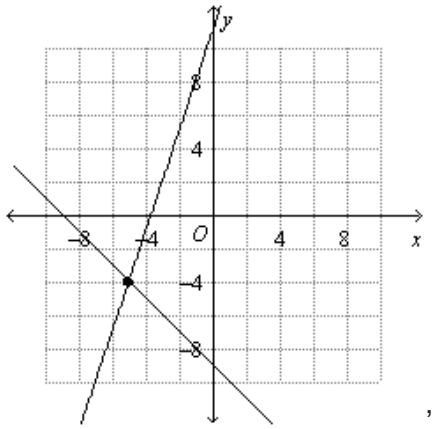
$$\begin{cases} y = -x - 9 \\ 3x - y = -11 \end{cases}$$

A 

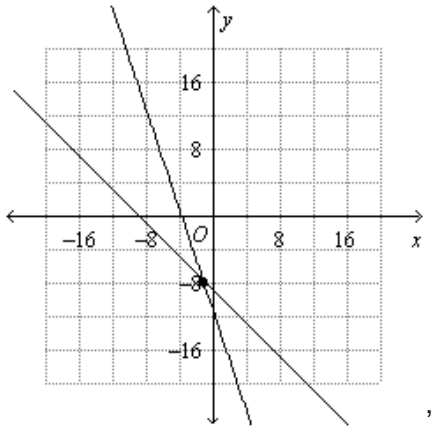
, solution: (–5, –4)

B 

, solution: (–10, –19)

C 

, solution: (–4, –5)

D 

, solution: (–1, –8)

16 Classify the system as *independent*, *dependent*, or *inconsistent*.

$$\begin{cases} -2x - y = 9 \\ 3x - 4y = -8 \end{cases}$$

A dependent
B inconsistent
C independent

17 Solve the system by using the substitution method.

$$\begin{cases} 5x - y = 5 \\ 5x - 3y = 15 \end{cases}$$

A (0, –5)
B (–5, 0)
C (5, 1)
D (1, 5)

18 Use the elimination method to solve the system.

$$\begin{cases} -x + 2y = 10 \\ -3x + 6y = 11 \end{cases}$$

A infinite solutions
B (–5, 2)
C (5, –2)
D no solutions

19 Solve the system using substitution or elimination. The answers are given as (x, y, z).

$$\begin{cases} 5x + 3y + 2z = -4 \\ -5x - 4y - 2z = 7 \\ 4x + 2y + 2z = -2 \end{cases}$$

A $(1, -3, 0)$

B $(-3, 3, 0)$

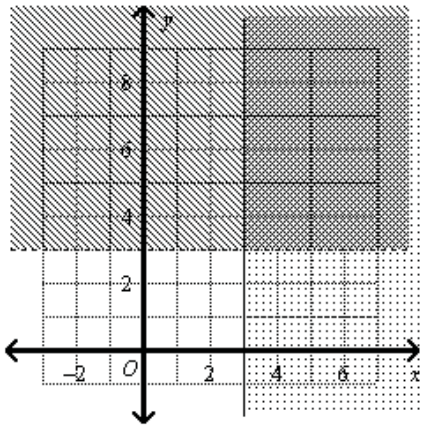
C $(-\frac{31}{5}, 11, -3)$

D $(1, -3, 12)$

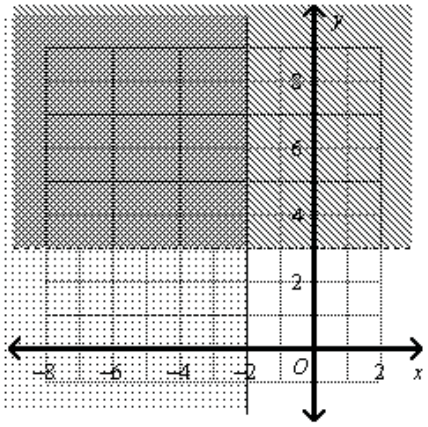
20 Choose the correct graph of the system of inequalities.

$$\begin{cases} x \geq -2 \\ y > 3 \end{cases}$$

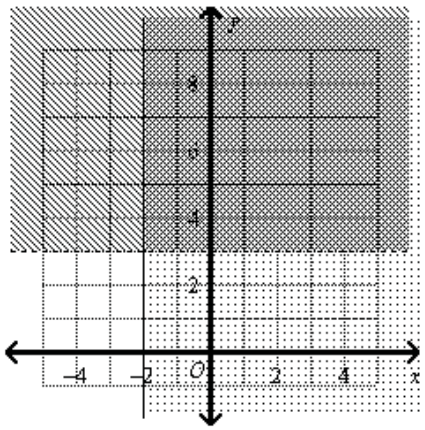
A



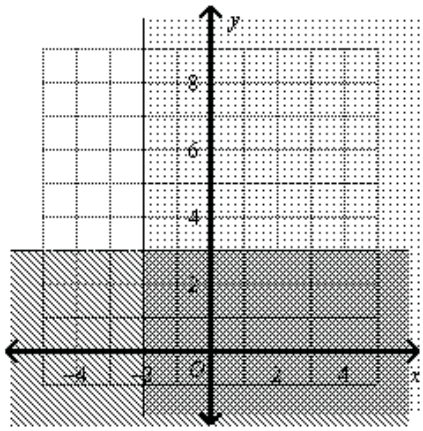
B



C



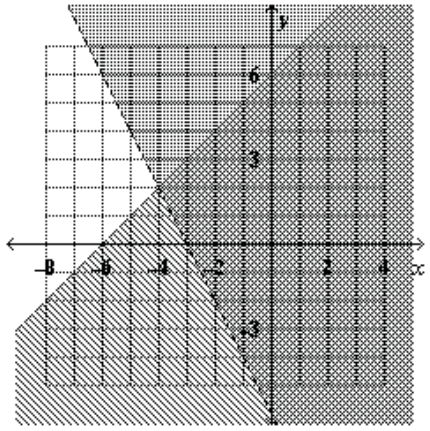
D



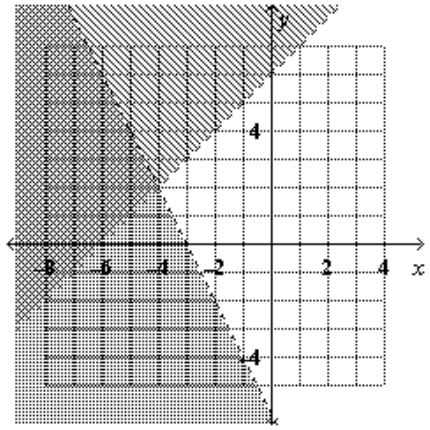
21 Choose the correct graph of the system of inequalities.

$$\begin{cases} y < x + 6 \\ 2x + y < -6 \end{cases}$$

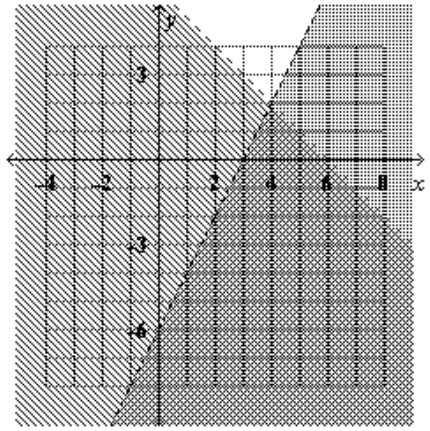
A



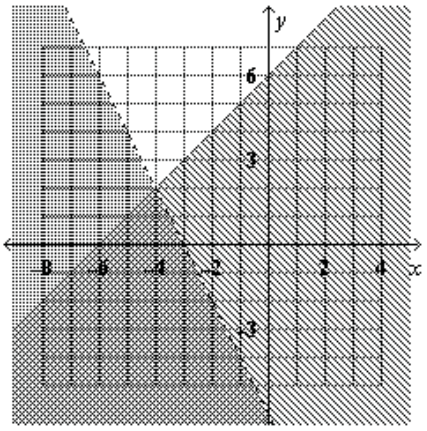
B



C



D



22 Represent the system with a matrix.

$$\begin{cases} 2x + 3y + 5z = 9 \\ -x + 4z = 10 \\ -6x + z - 12 = y \end{cases}$$

A $\left[\begin{array}{ccc|c} 2 & 3 & 5 & 9 \\ -1 & 0 & 4 & 10 \\ -6 & -1 & 1 & 12 \end{array}\right]$

B $\left[\begin{array}{ccc|c} 2 & -1 & 6 & 9 \\ 3 & 0 & 1 & 10 \\ 5 & 4 & -1 & 12 \end{array}\right]$

C $\left[\begin{array}{ccc|c} 2 & 3 & 5 & 9 \\ -1 & 0 & 4 & 10 \\ 6 & 1 & -1 & -12 \end{array}\right]$

D $\left[\begin{array}{ccc|c} 2 & 3 & 5 & 9 \\ -1 & 4 & 0 & 10 \\ 6 & 1 & -1 & -12 \end{array}\right]$