

## Pre-Algebra MP4 Exam Study Guide

### Multiple Choice

Identify the letter of the choice that best completes the statement or answers the question.

#### Solve the equation.

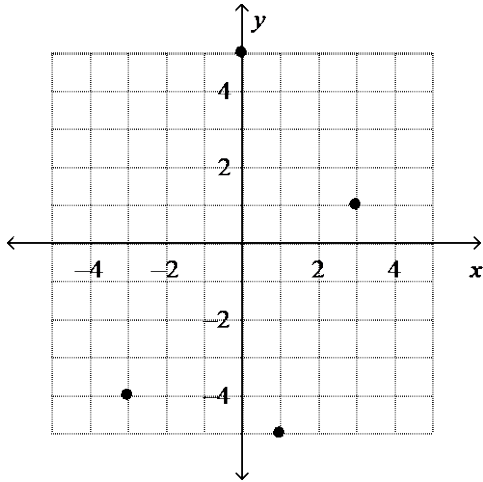
- \_\_\_\_\_ 1.  $-3x + 6 = -9$   
a. -3                      b. 5                      c. 3                      d. 1
- \_\_\_\_\_ 2.  $\frac{3}{4}(x - 12) = 3$   
a. 20                      b. 9                      c. 16                      d. -12
- \_\_\_\_\_ 3. Uma wants to buy a video game system for \$270. She has \$60 and is saving \$30 each week. Solve the equation  $30w + 60 = 270$  to find how many weeks  $w$  it will take Uma to save enough to buy the system.  
a. 6 weeks                      b. 7 weeks                      c. 9 weeks                      d. 8 weeks
- \_\_\_\_\_ 4. Brandon needs \$480 to buy a TV and stereo system for his room. He received \$60 in cash for birthday presents. He plans to save \$30 per week from his part-time job. To find how many weeks  $w$  it will take to have \$480, solve  $60 + 30w = 480$ .  
a. 16 weeks                      b. 13 weeks                      c. 15 weeks                      d. 14 weeks
- \_\_\_\_\_ 5. Mandy and 2 friends bought some mechanical pencils at a special sale. They divided some of the pencils equally among themselves and then gave 3 to Mandy's little brother. At that time they had 19 pencils left.  
Solve the equation  $\frac{P}{3} - 3 = 19$  to find the number of pencils  $p$  that they bought at the sale.  
a. 48 pencils                      b. 57 pencils                      c. 66 pencils                      d. 22 pencils
- \_\_\_\_\_ 6. Miranda opened a checking account with \$560 from her summer job. She withdrew the same amount each week for 13 weeks. Her balance was then \$365. Solve the equation  $560 - 13m = 365$  to find how much money  $m$  she withdrew each week.  
a. \$15                      b. \$71                      c. \$39                      d. \$28
- \_\_\_\_\_ 7. Paul rented a car for \$129 plus \$0.25 per mile. The total bill at the end of his trip was \$216.50. Use the equation  $129 + 0.25x = 216.50$  to find the number of miles he drove.  
a. 1,382 miles                      b. 350 miles                      c. 864 miles                      d. 607 miles
- \_\_\_\_\_ 8. The Party Room at Penny's Pizza rents for an initial fee of \$30 and then \$5 per hour. Aislyn's bill for her birthday party was \$50. For how many hours did she rent the room?  
a. 6 hours                      b. 16 hours                      c. 4 hours                      d. 10 hours
- \_\_\_\_\_ 9. If a number  $n$  is subtracted from 25, the result is three less than  $n$ . What is the value of  $n$ ?  
a. 14                      b. 22                      c. 28                      d. 11
- \_\_\_\_\_ 10. The width of a rectangle is 13 centimeters. Let  $x$  represent the length. Find all possible values for  $x$  if the perimeter is at least 228 centimeters.  
a.  $x \geq 44$  cm                      b.  $x \geq 101$  cm                      c.  $x \geq 18$  cm                      d.  $x \geq 215$  cm
- \_\_\_\_\_ 11. Jordan invested \$1000 in a savings account. The interest rate is 6% per year. Find the simple interest earned in 4 years. Then find the total of principal plus interest.  
a. \$24,000.00; \$25,000.00                      c. \$262.48; \$1,262.48  
b. \$60.00; \$1,060.00                      d. \$240.00; \$1,240.00
- \_\_\_\_\_ 12. You deposit \$500 in an account that earns 5% compounded annually (once per year). What is the balance in your account after 5 years? Round your answer to the nearest cent.  
a. \$2,625.00                      b. \$625.00                      c. \$886.89                      d. \$638.14

**Graph the relation in the table. Then use the vertical-line test. Is the relation a function?**

13.

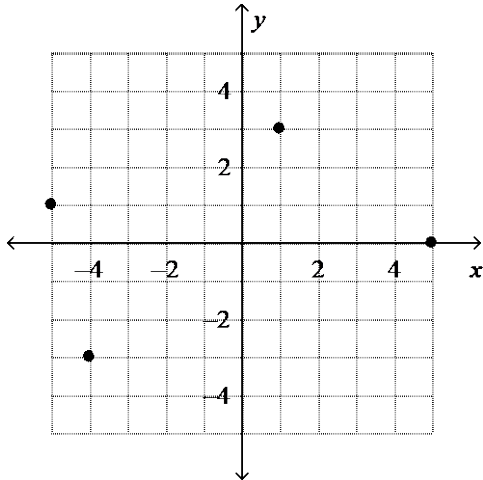
$x$	$y$
-3	-4
0	5
1	-5
3	1

a.



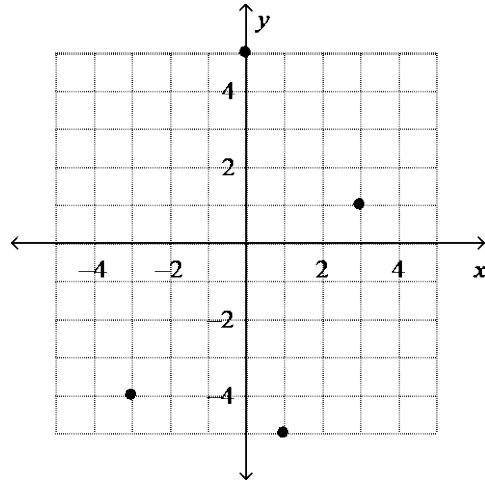
The relation is not a function.

b.



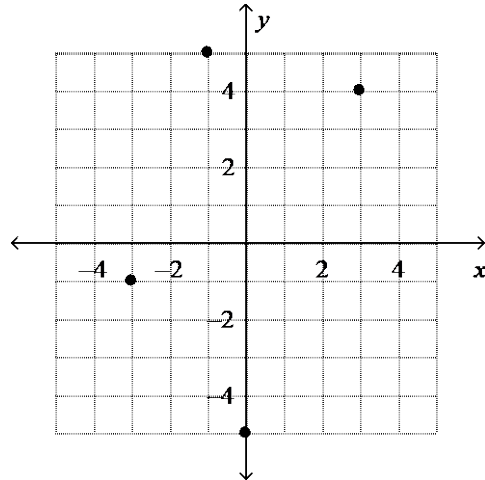
The relation is not a function.

c.



The relation is a function.

d.



The relation is a function.

14. The equation  $m = 0.3048f$  gives the relationship between  $m$  meters and  $f$  feet. Express 9 feet in meters. Round your answer to the nearest thousandth.

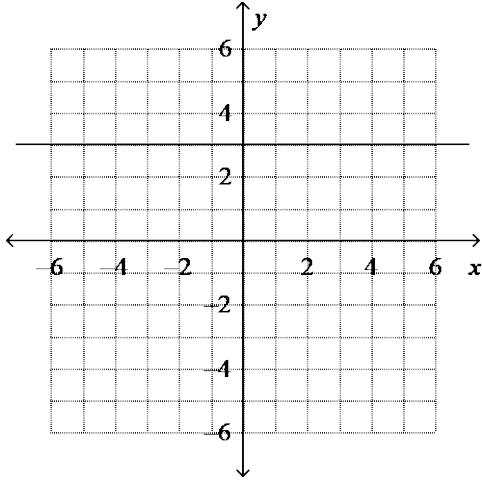
- a. 29.528 meters
- b. 3 meters

- c. 2.743 meters
- d. 9.305 meters

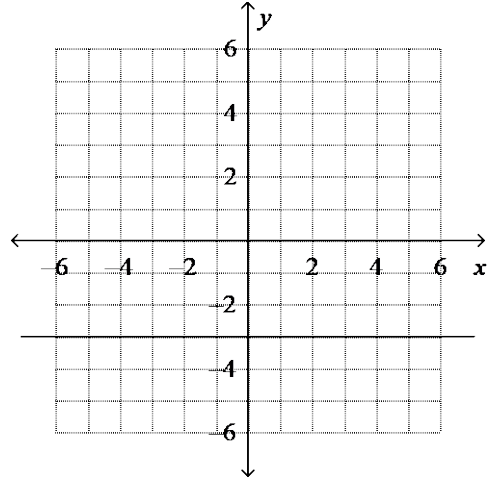
**Graph the linear equation.**

15.  $y = -3$

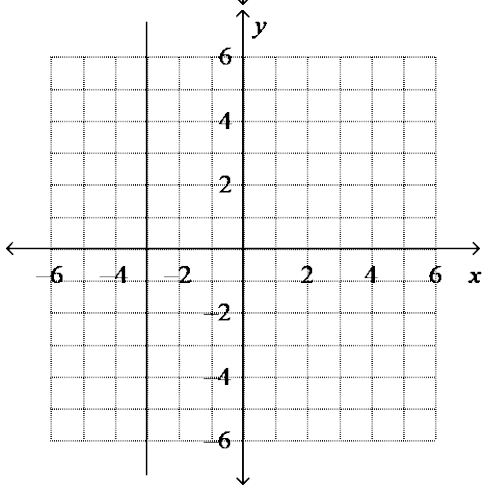
a.



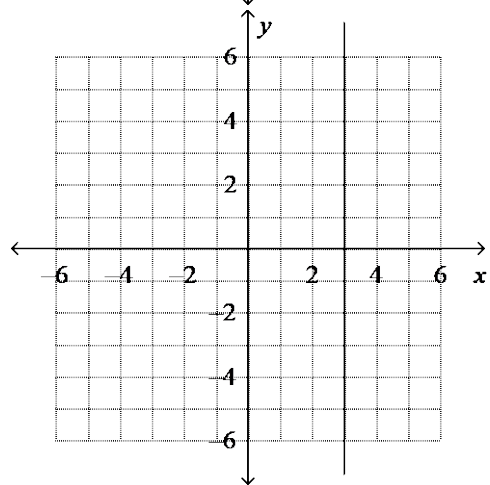
c.



b.

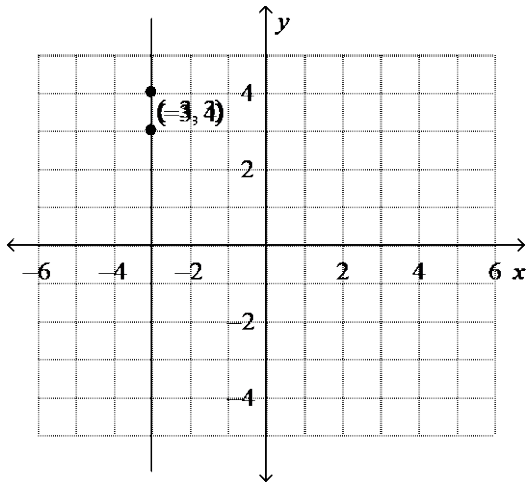


d.



**Find the slope of the line.**

\_\_\_\_\_ 16.



a. 0

b. -3

c. 3

d. undefined

**Find the slope of the line through the pair of points.**

\_\_\_\_\_ 17.  $A(2, -3), P(2, 9)$

a. 0

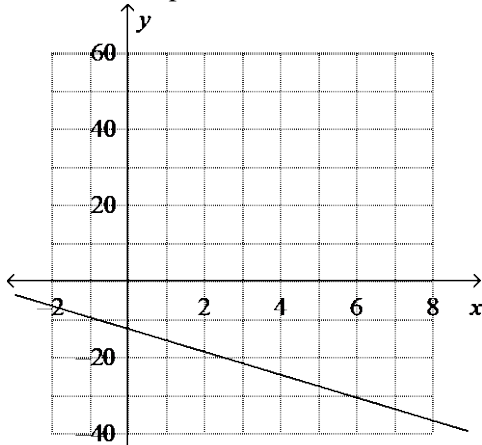
b.  $\frac{2}{3}$

c.  $-\frac{1}{3}$

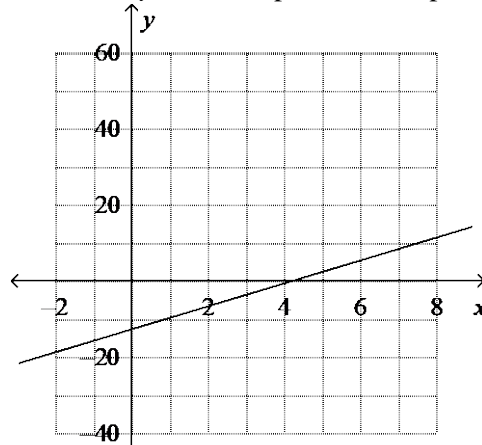
d. undefined

18. The temperature on a particular day started at  $-13^{\circ}\text{F}$ . It rose steadily by  $3^{\circ}$  each hour. The function  $y = -13 + 3x$  models the temperature, where  $x$  is the number of hours and  $y$  is the temperature. Graph the equation.

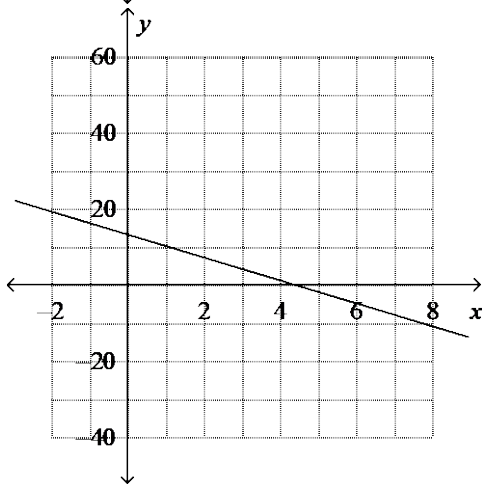
a.



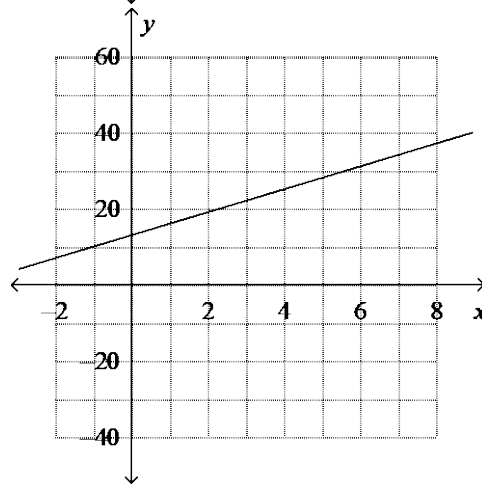
c.



b.



d.

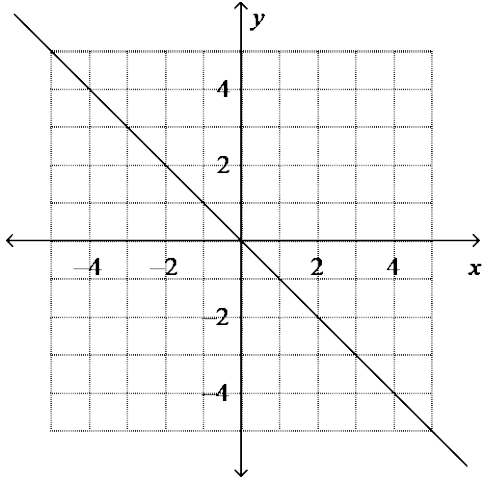


**Identify the slope and y-intercept of the graph of the equation. Then graph the equation.**

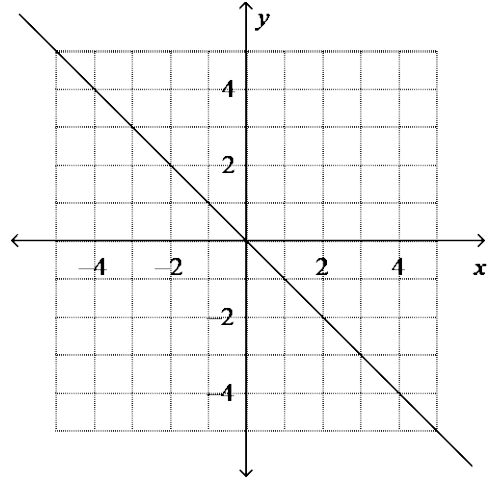
19.  $y = -x$

a. slope:  $-1$ ; y-intercept: 0

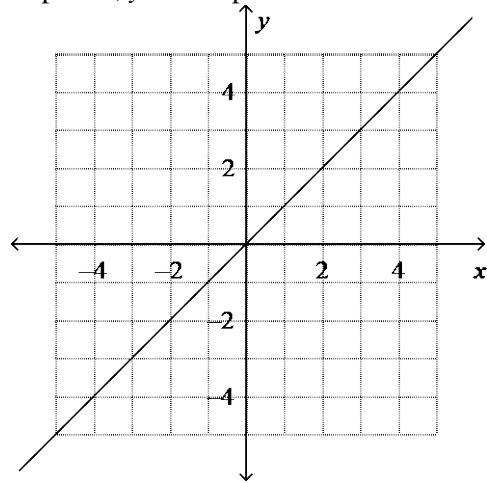
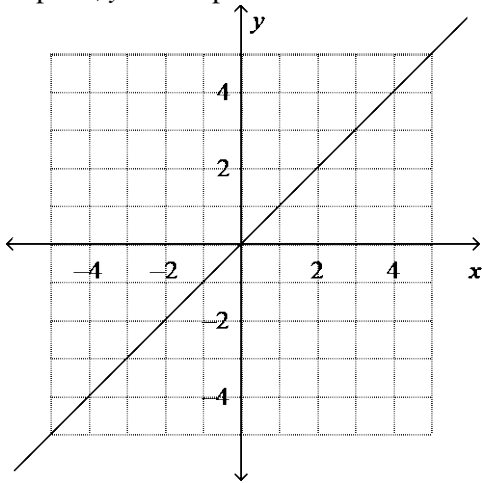
c. slope: 0; y-intercept: 0



b. slope: 1; y-intercept: 0

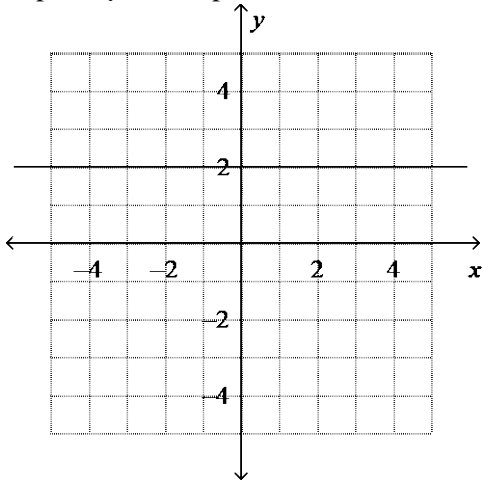


d. slope: -1; y-intercept: 0



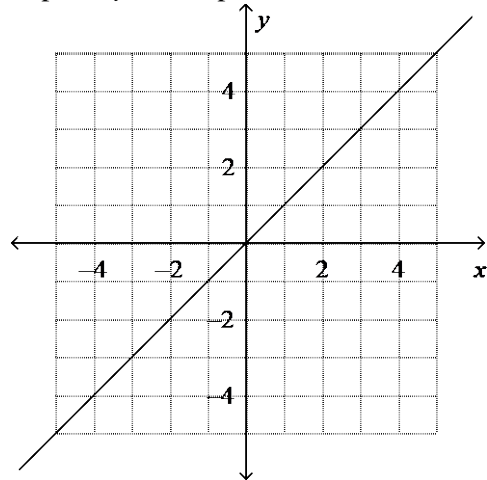
20.  $y = 2$

a. slope: 0; y-intercept: 2

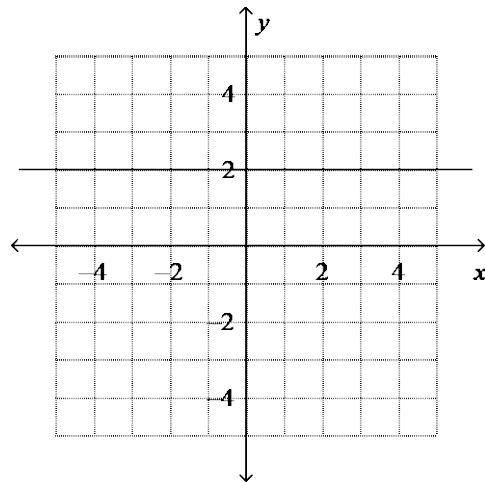
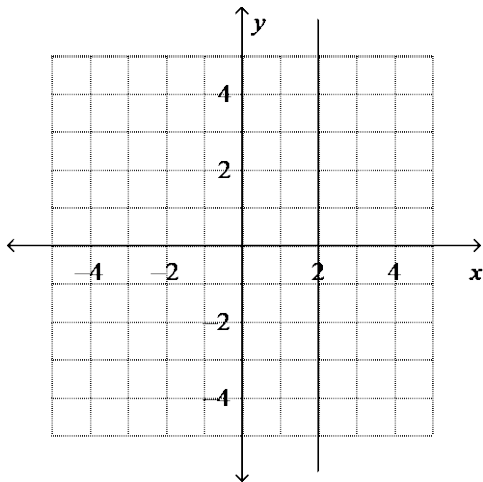


b. slope: undefined; y-intercept: none

c. slope: 1; y-intercept: 2



d. slope: 2; y-intercept: 2



Write a rule for the linear function in the table.

21.

$x$	$f(x)$
1	-7
2	-10
3	-13
4	-16

a.  $f(x) = -\frac{1}{3}x - 4$

b.  $f(x) = 3x + 4$

c.  $f(x) = -3x - 4$

d.  $f(x) = x - 7$

22.

$x$	$f(x)$
0	1
1	$1\frac{1}{2}$
2	2
3	$2\frac{1}{2}$
4	3

a.  $f(x) = \frac{1}{2}x + 1$

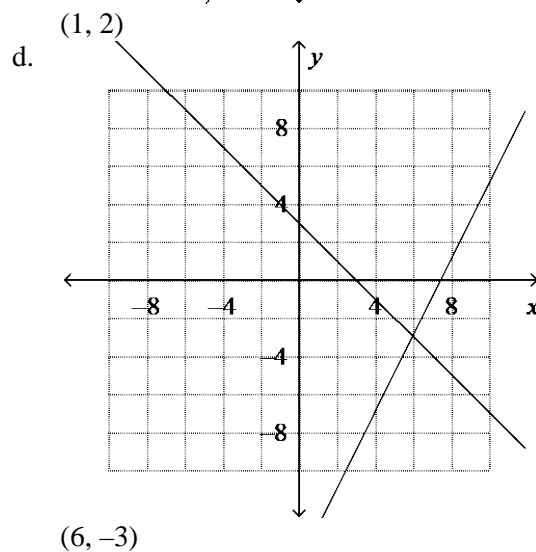
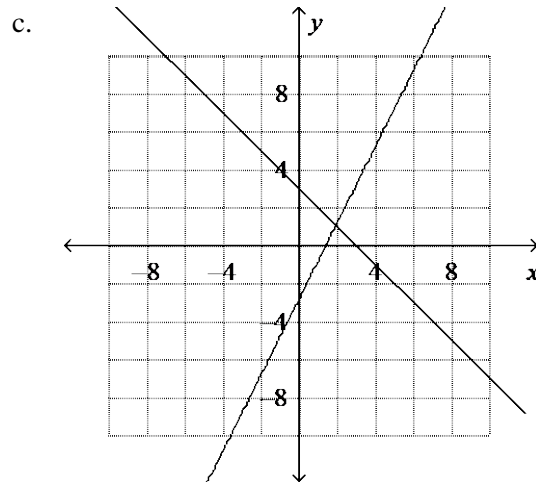
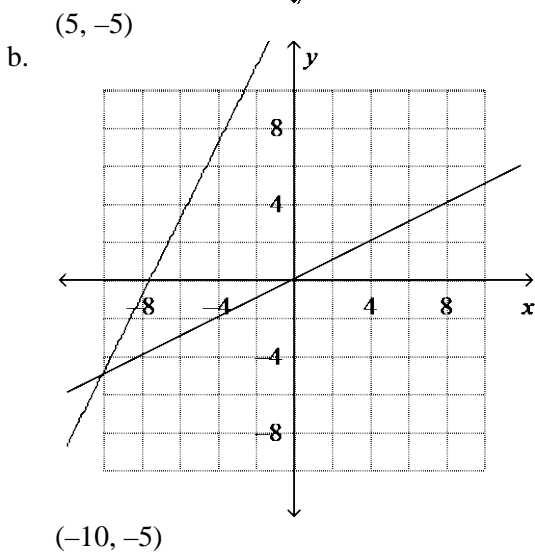
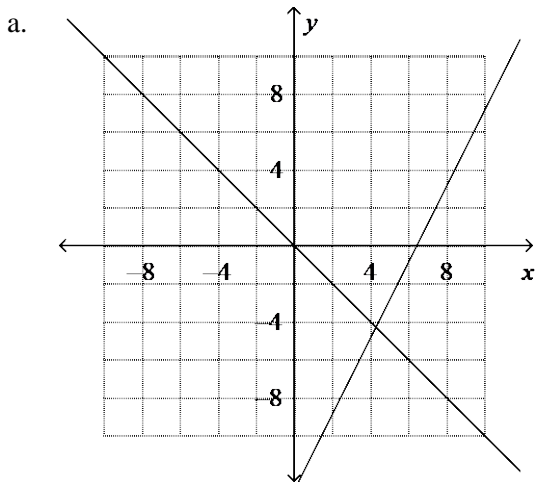
b.  $f(x) = \frac{1}{2}x - 1$

c.  $f(x) = x + \frac{1}{2}$

d.  $f(x) = \frac{1}{2}x$

Solve the system of equations by graphing.

23.  $x + y = 3$   
 $y = 2x - 15$



**Short Answer**

24. Jeremy is building a large deck for a community center. The deck is shaped as a rectangle. The width of the deck is 29 feet. The perimeter of the deck is to be at least 134 feet.
- Write an inequality that represents all possible values for the length of the deck.
  - Find all possible values for the length of the deck.
25. Is the time it takes to drive to the ski resort a function of the speed you drive? Explain.