

# MAT1033 Review #1

Name \_\_\_\_\_

**SHORT ANSWER.** Write the word or phrase that best completes each statement or answers the question.

**Determine whether the ordered pair is a solution of the given linear equation.**

1)  $x - 8y = -40$ ;  $(0, 5)$

1) \_\_\_\_\_

2)  $x = -y$ ;  $(10, -10)$

2) \_\_\_\_\_

3)  $2x + 6y = -4$ ;  $(0, -2)$

3) \_\_\_\_\_

4)  $-6y + 4x = 16$ ;  $(-4, 0)$

4) \_\_\_\_\_

5)  $x - y = 5$ ;  $(1, 4)$

5) \_\_\_\_\_

6)  $y = -3x + 4$ ;  $(-2, 2)$

6) \_\_\_\_\_

**Complete the ordered pair so that it is a solution of the given linear equation.**

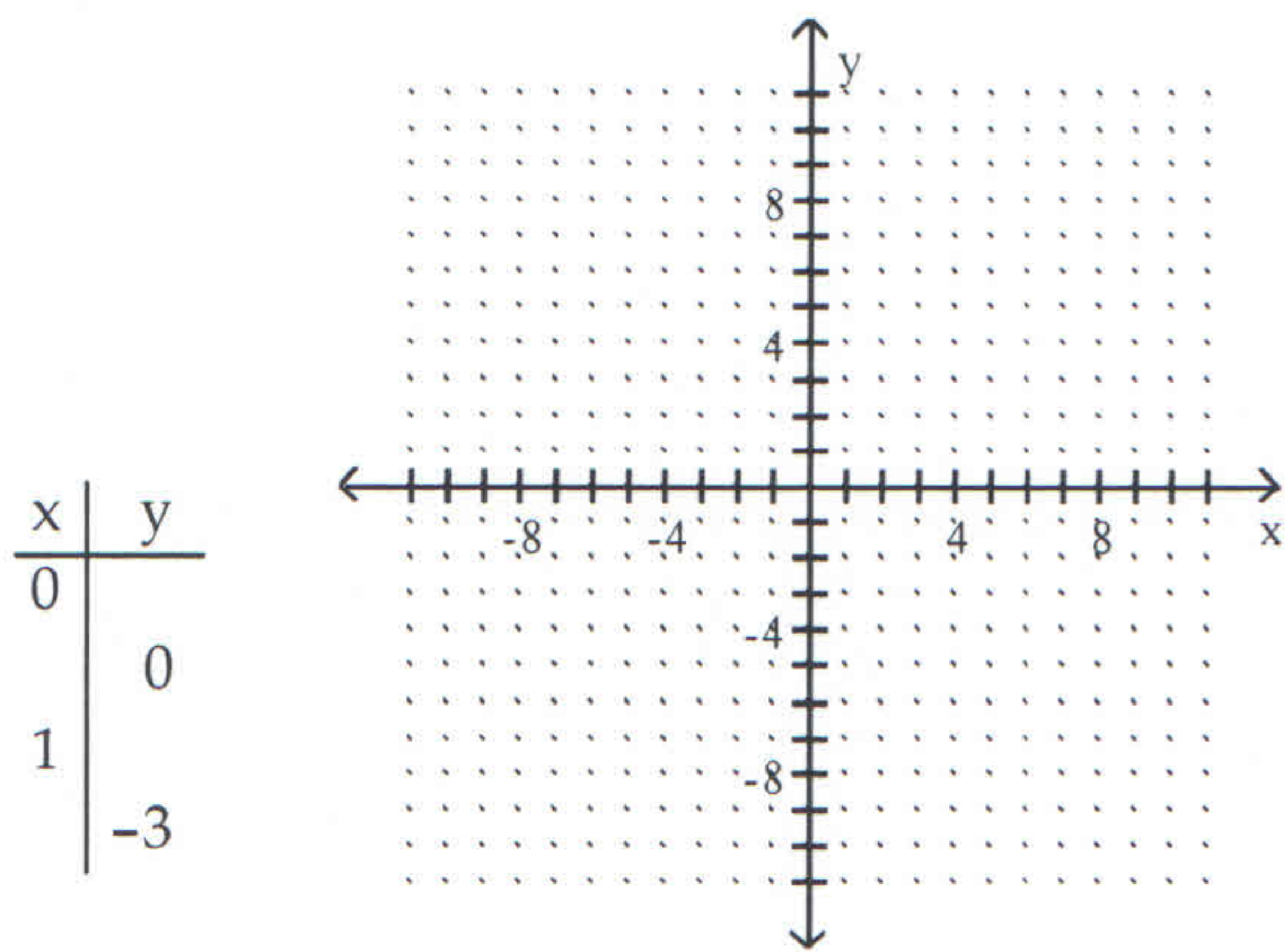
7)  $y = -2x + 2$ ;  $(-3, \quad)$ ,  $(2, \quad)$ ,  $(0, \quad)$

7) \_\_\_\_\_

**Complete the table of ordered pairs for the given linear equation; then plot the solution.**

8)  $3x + 2y = 6$

8) \_\_\_\_\_



**Determine whether the equation is a linear equation in two variables.**

9)  $x = 4y$

9) \_\_\_\_\_

10)  $x = 9$

10) \_\_\_\_\_

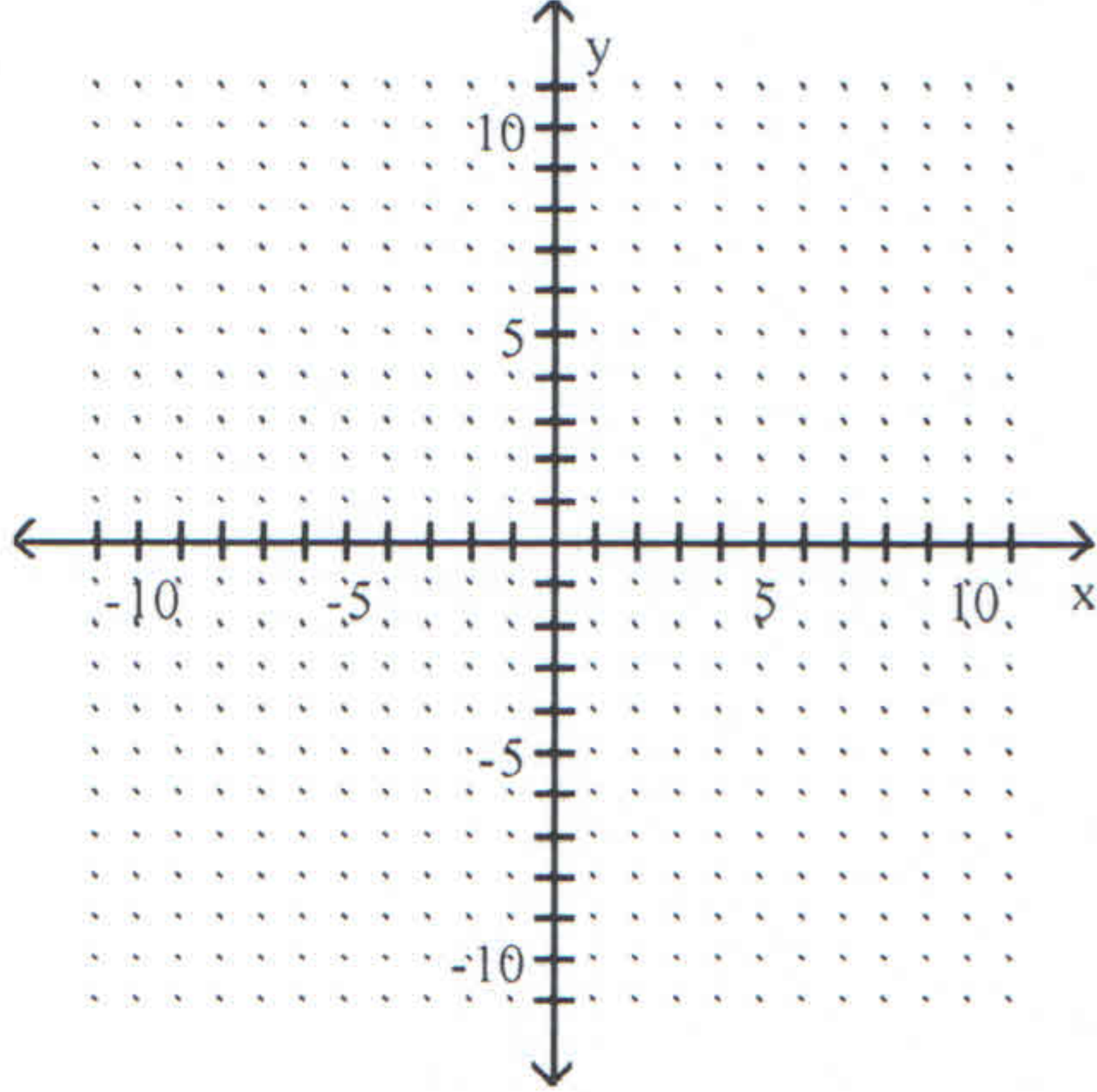


Find three ordered pair solutions by completing the table. Then use the ordered pairs to graph the equation.

11)  $y = x - 6$

11) \_\_\_\_\_

x	y
3	
-4	
0	



Determine whether the equation is a linear equation in two variables.

12)  $6x - 7y^2 = 5$

12) \_\_\_\_\_

13)  $5y = x - 7$

13) \_\_\_\_\_

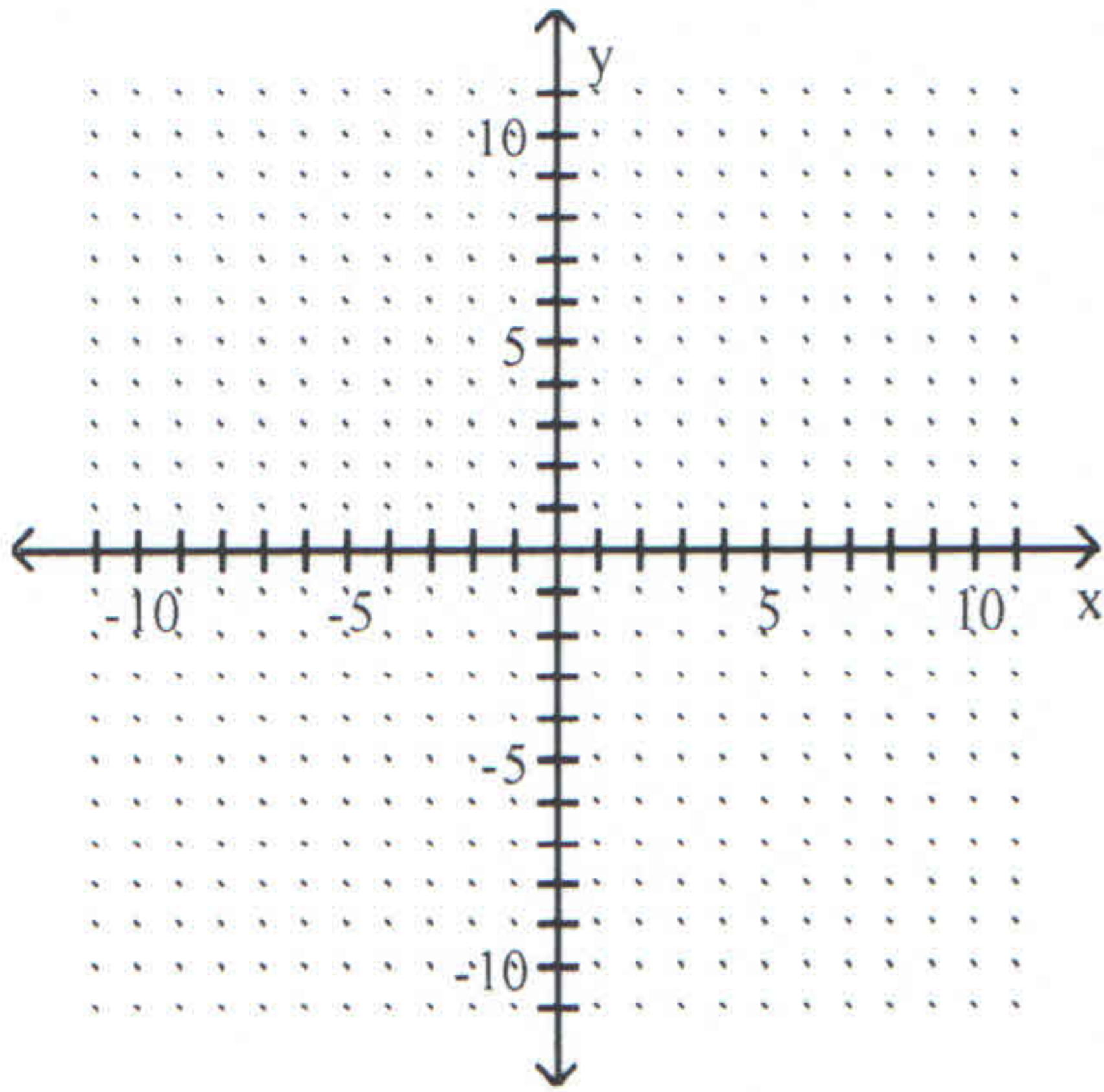
14)  $x + 4y = -4$

14) \_\_\_\_\_

Graph the linear equation.

15)  $x = -2y$

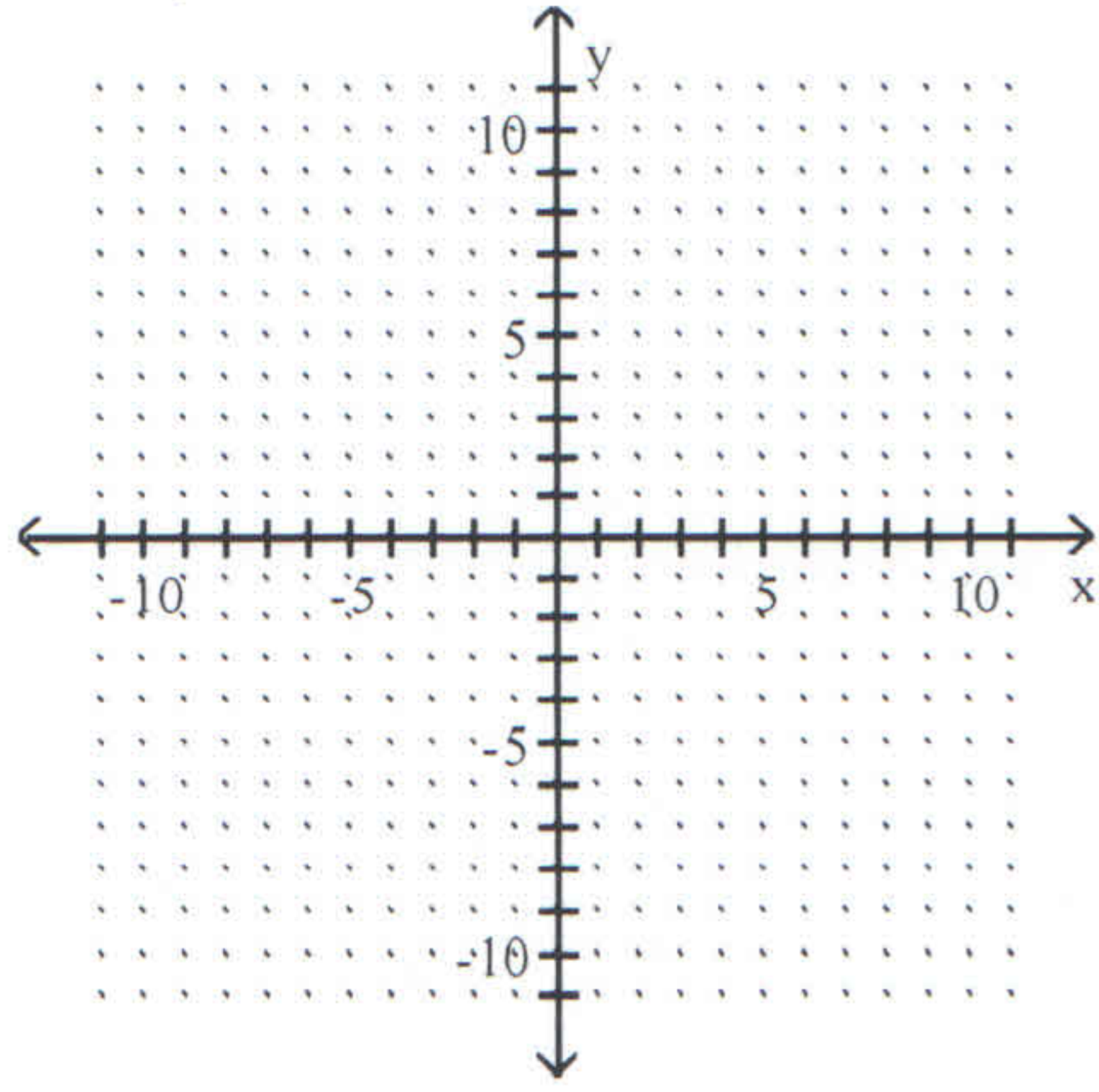
15) \_\_\_\_\_





16)  $2x = y - 7$

16) \_\_\_\_\_

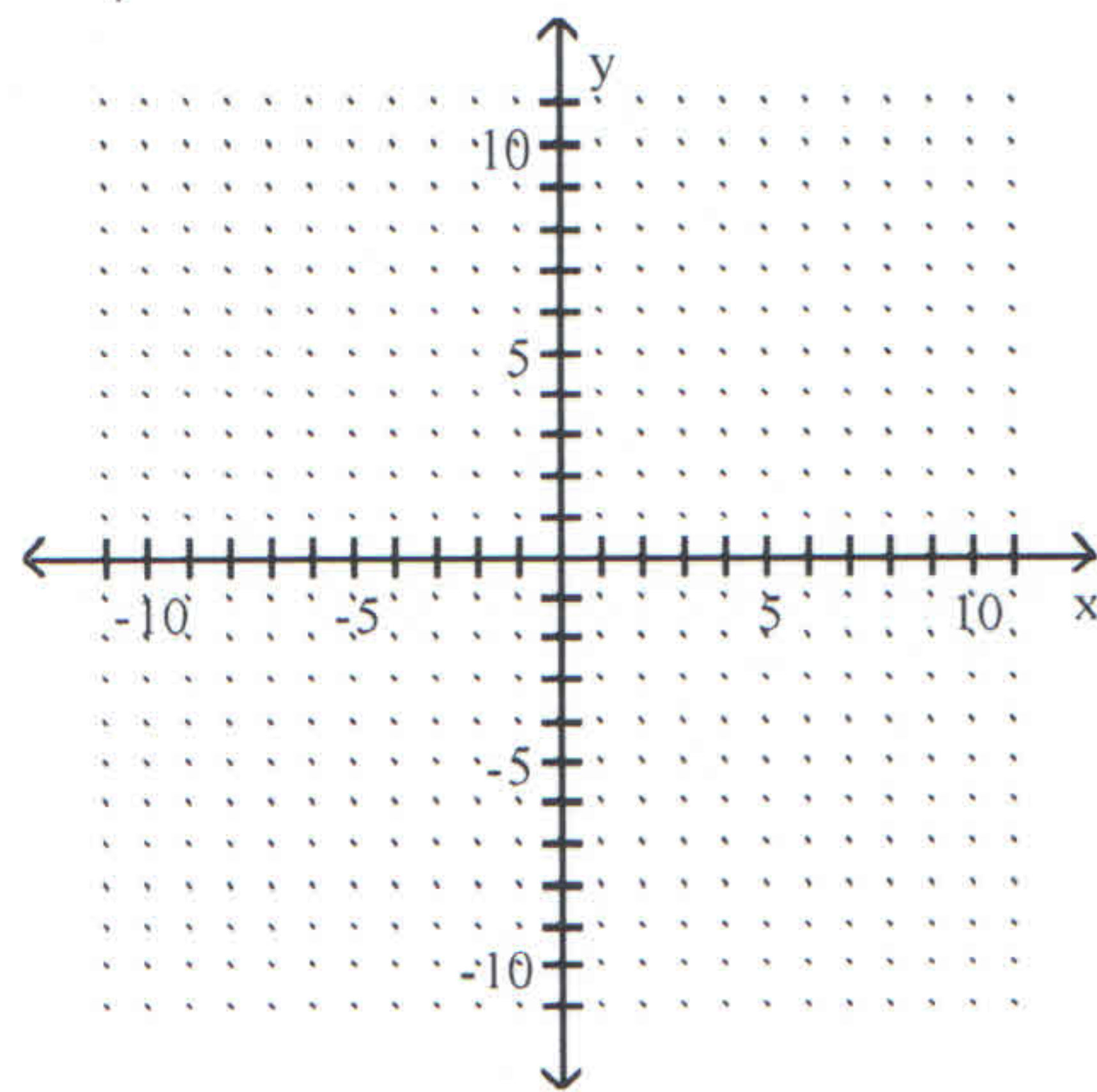


Find three ordered pair solutions by completing the table. Then use the ordered pairs to graph the equation.

17)  $y = -4x + 6$

17) \_\_\_\_\_

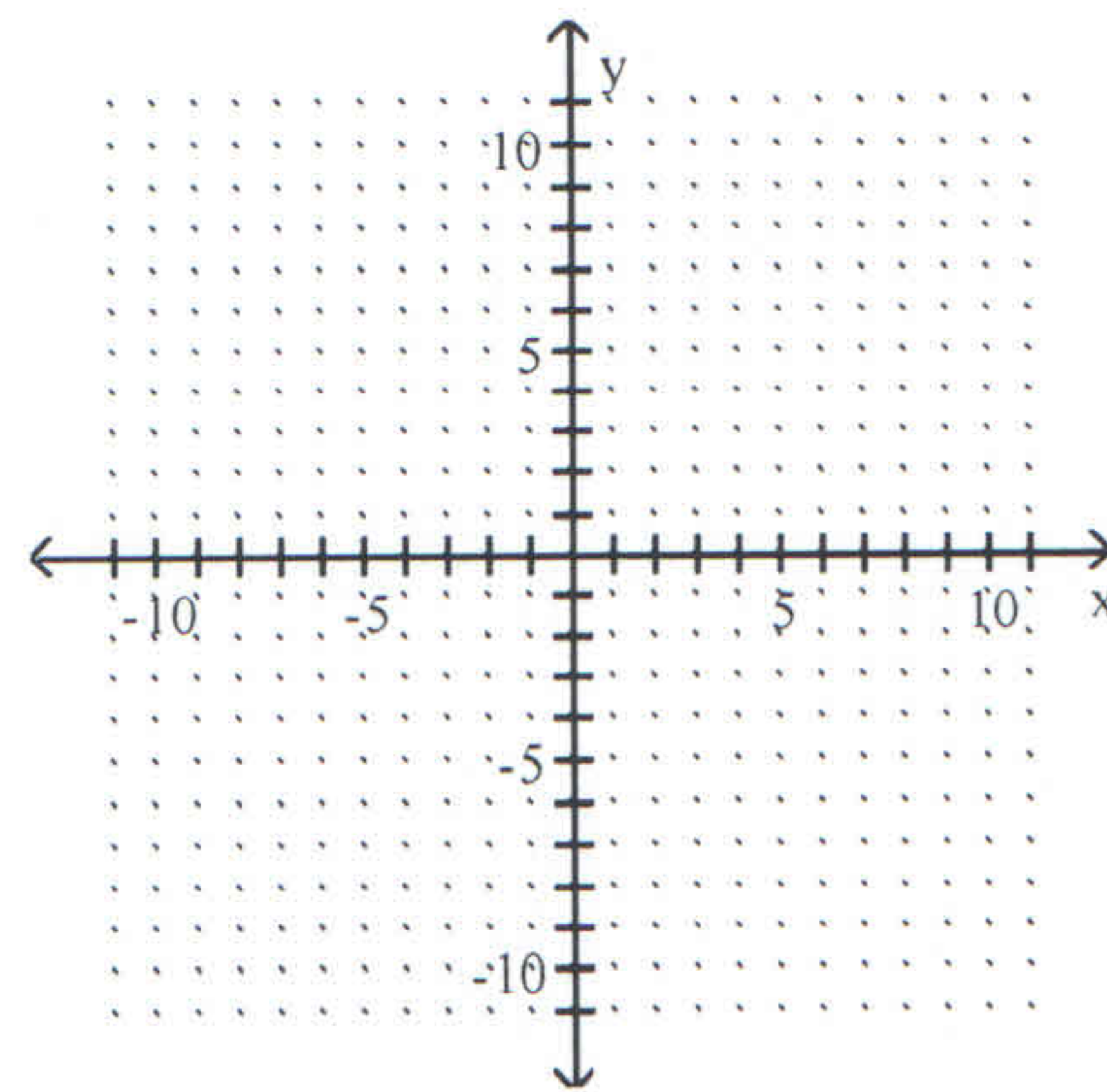
x	y
0	
1	
-1	



Graph the linear equation by finding and plotting its intercepts.

18)  $-4x - 16y = 16$

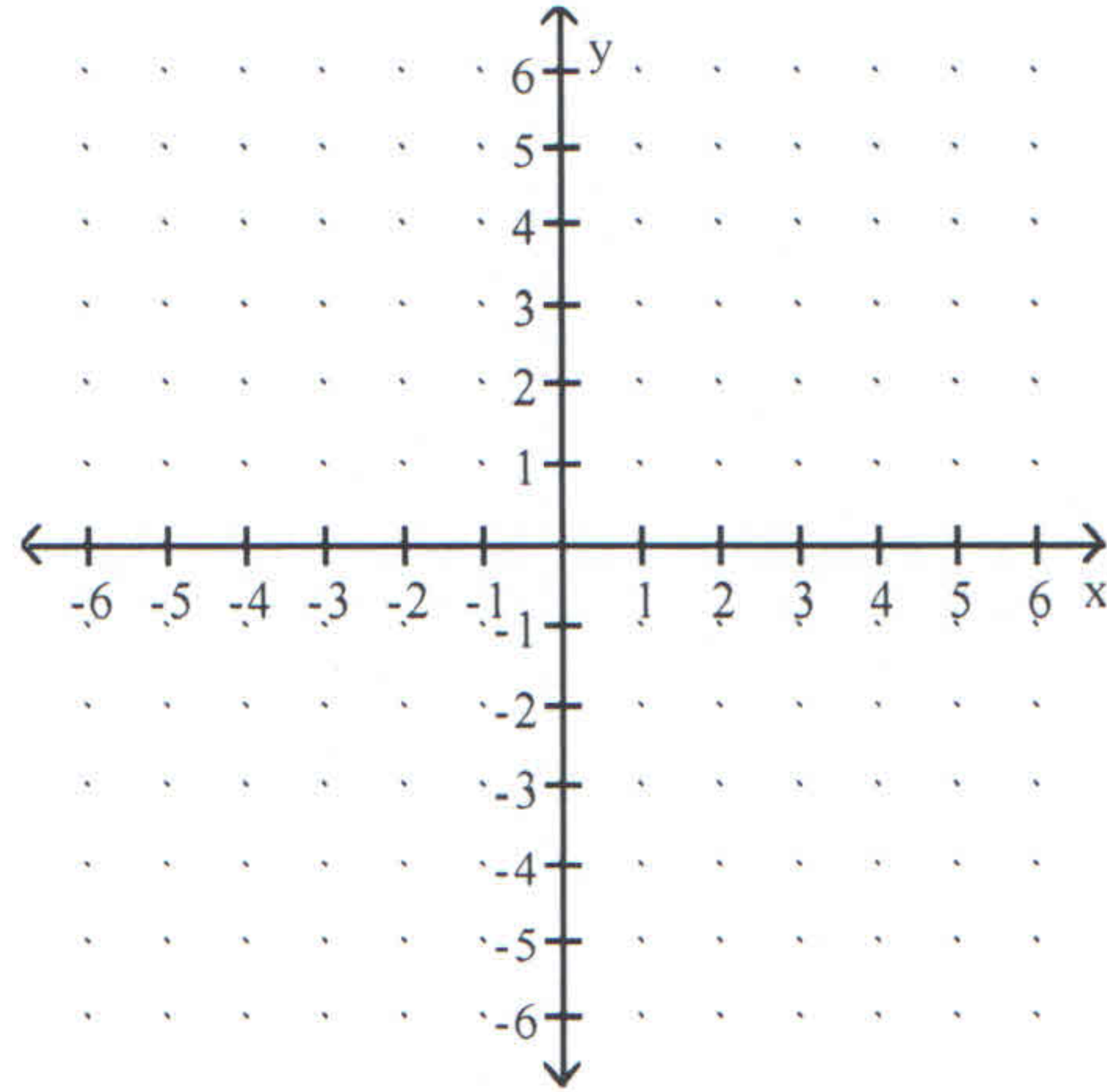
18) \_\_\_\_\_





Graph the linear equation.

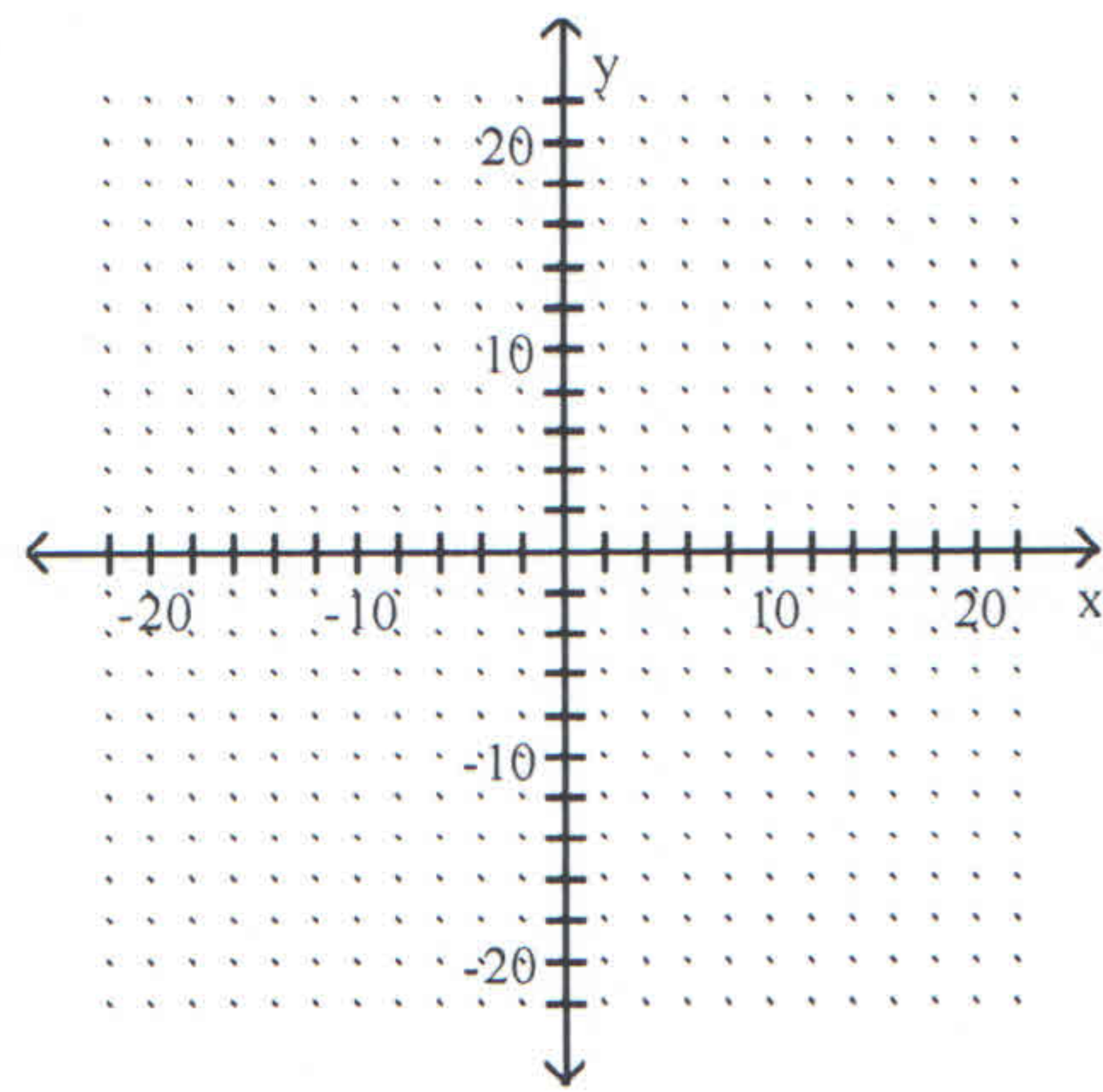
19)  $x = 5$



19) \_\_\_\_\_

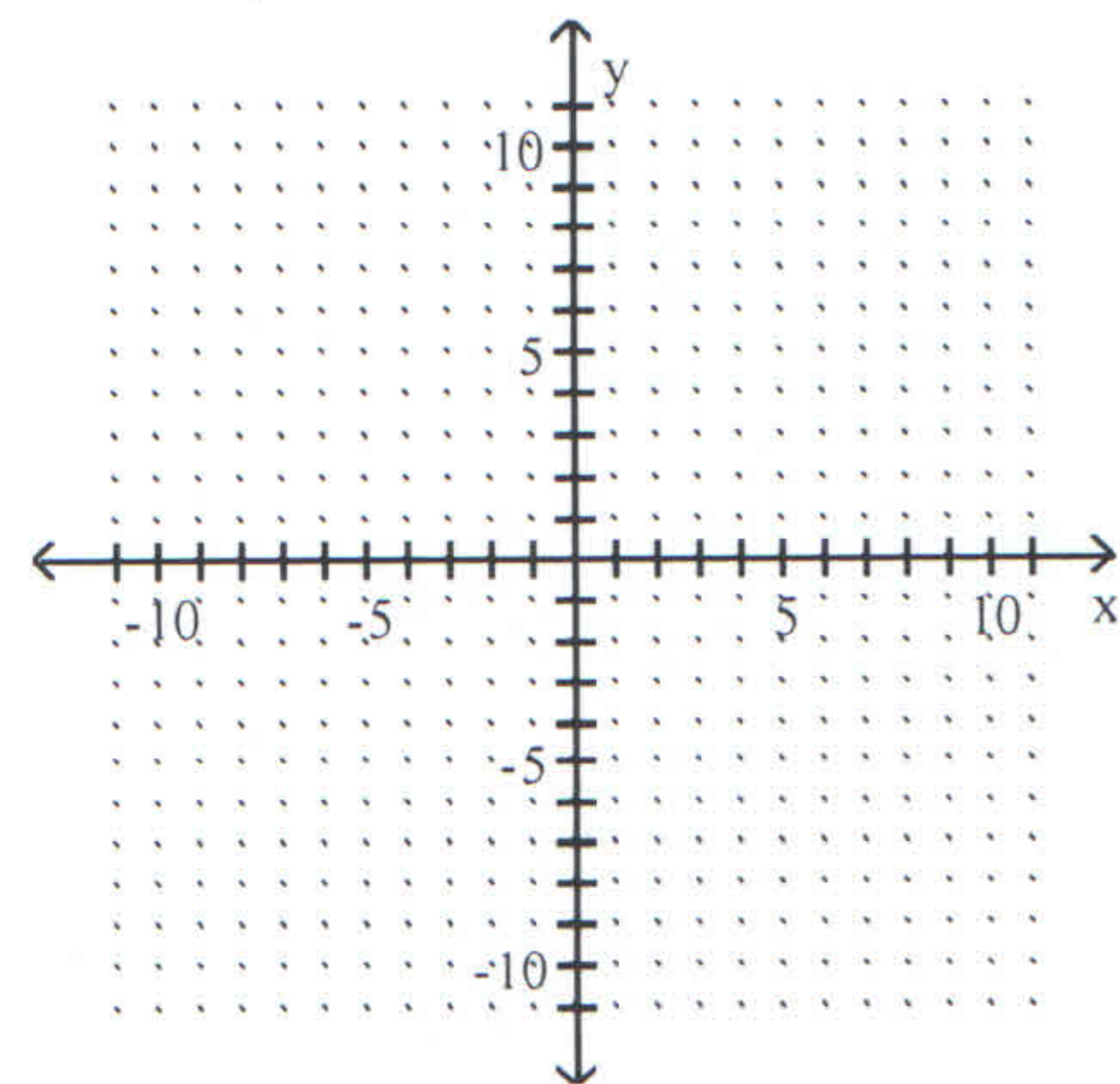
Graph the linear equation by finding and plotting its intercepts.

20)  $-2x - y = -6$



20) \_\_\_\_\_

21)  $6x - 30y = 30$

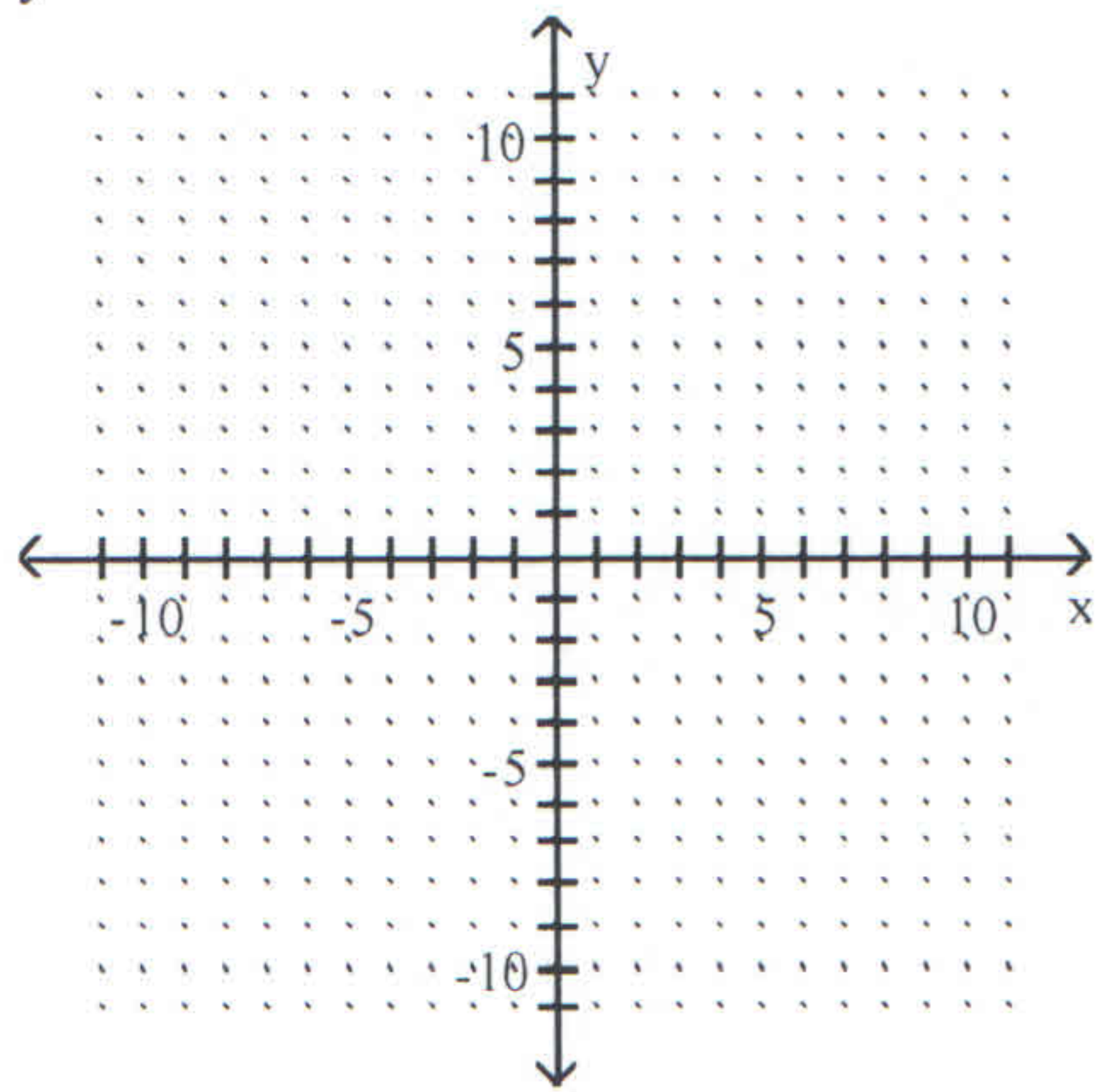


21) \_\_\_\_\_



22)  $y = -4x + 7$

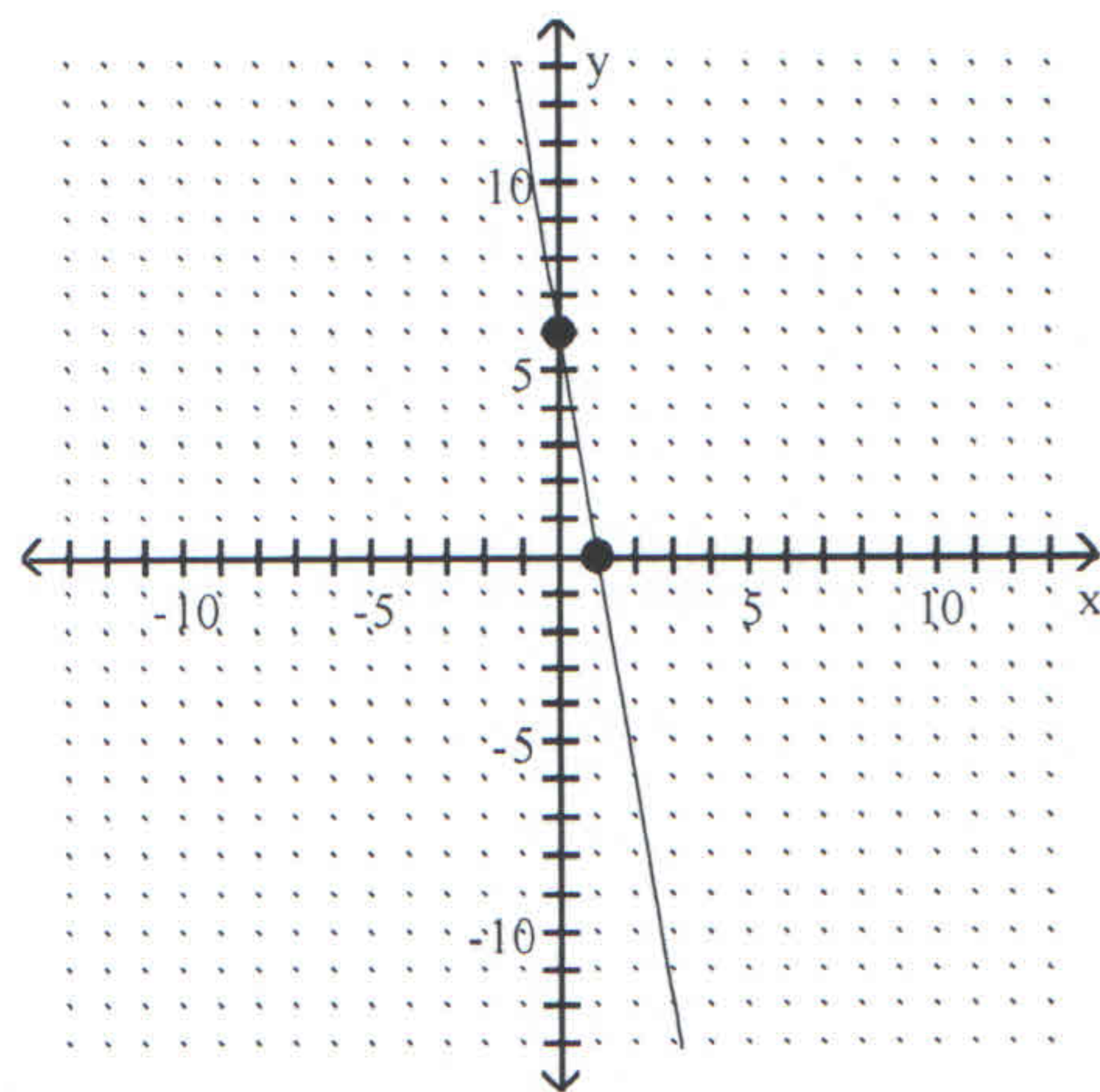
22) \_\_\_\_\_



Identify the intercepts.

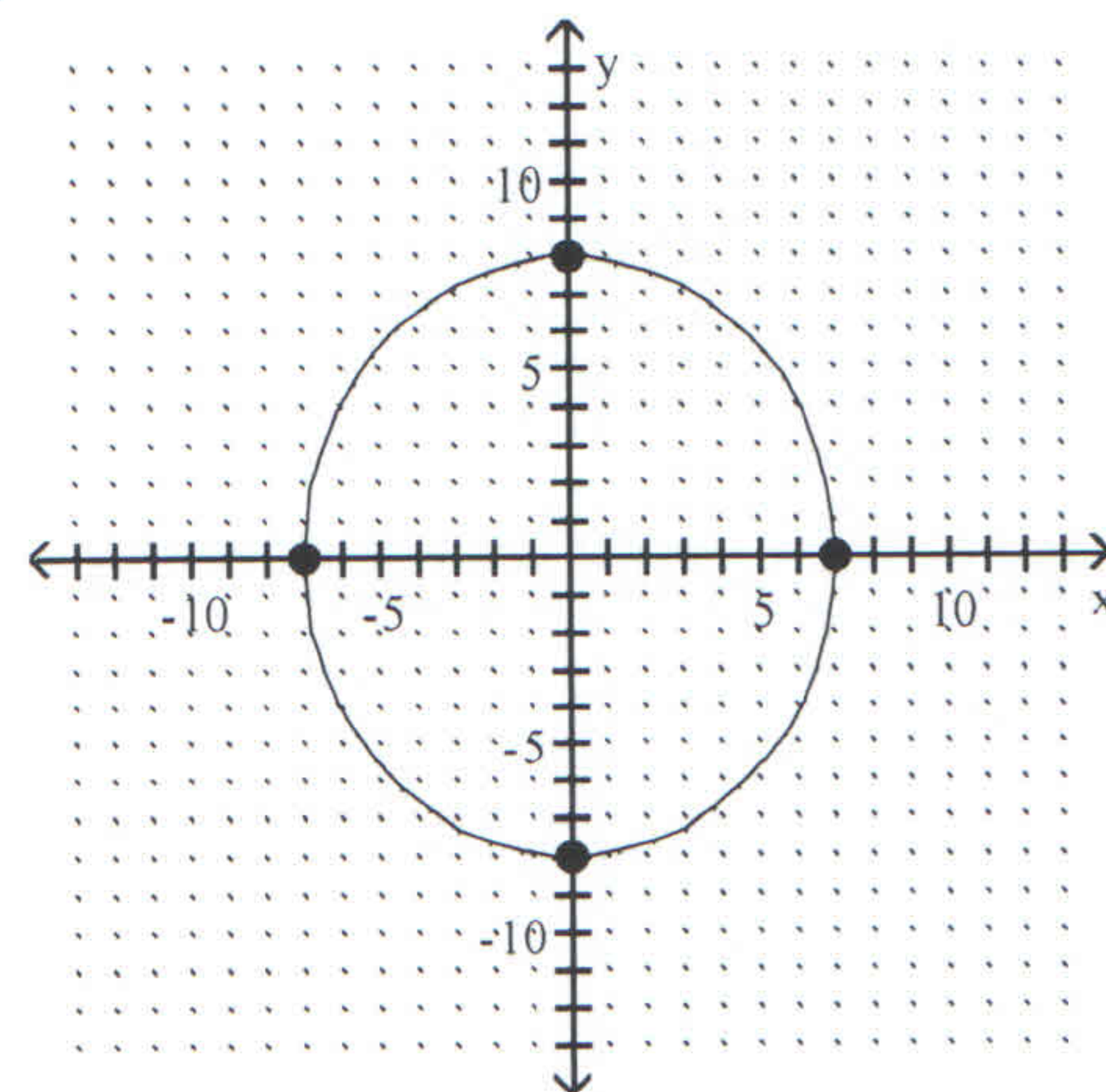
23)

23) \_\_\_\_\_



24)

24) \_\_\_\_\_



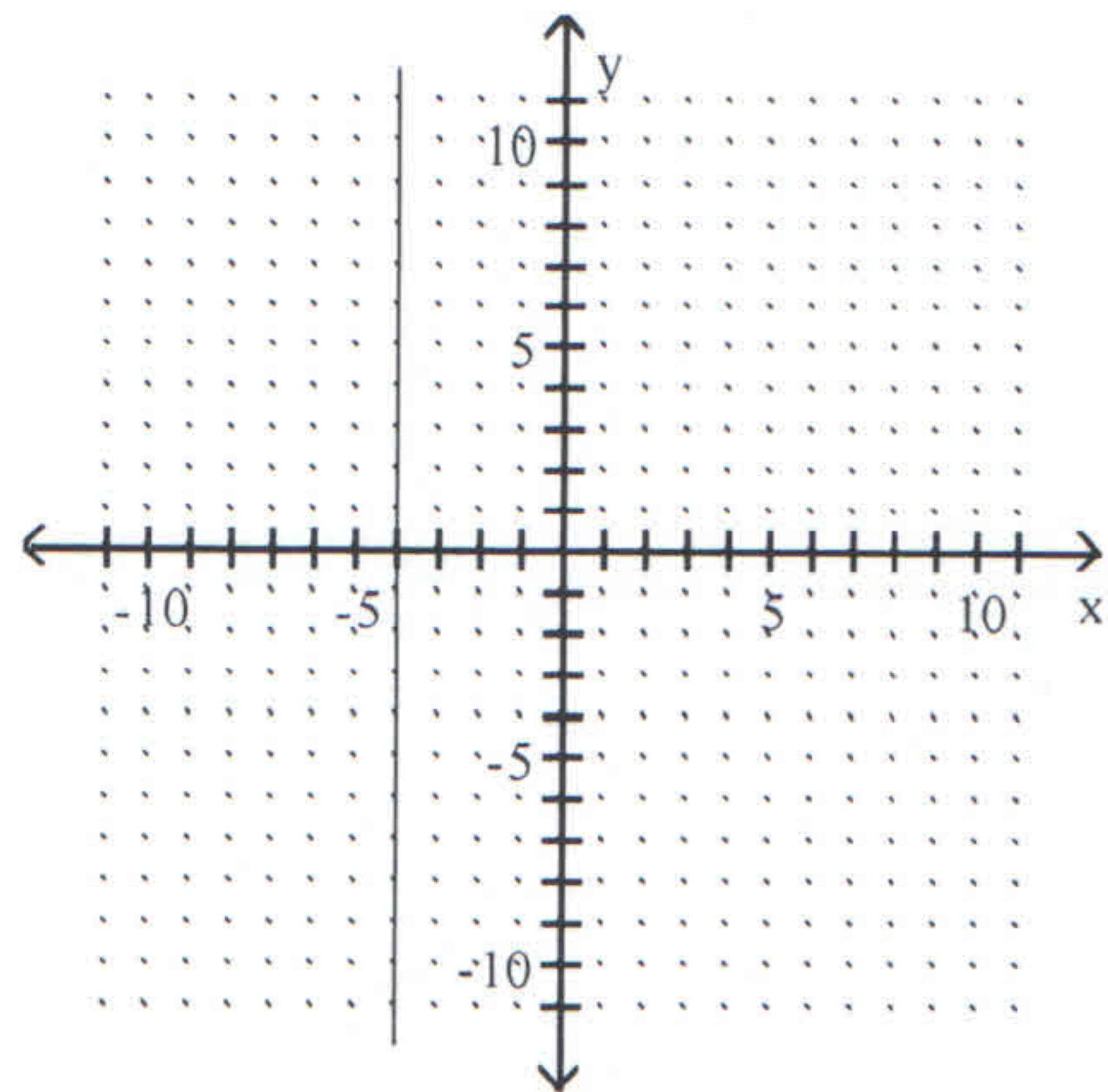


**MULTIPLE CHOICE.** Choose the one alternative that best completes the statement or answers the question.

**Match the graph with its equation.**

25)

25) \_\_\_\_\_



A)  $x = -4$

B)  $y = -6x + 4$

C)  $y = -4$

D)  $x = 4$

**SHORT ANSWER.** Write the word or phrase that best completes each statement or answers the question.

**Determine whether the pair of lines is parallel, perpendicular, or neither.**

26)  $6x + 2y = 8$   
 $27x + 9y = 39$

26) \_\_\_\_\_

27)  $y = 2x - 2$   
 $y = -\frac{1}{2}x + 4$

27) \_\_\_\_\_

28)  $3x - 8y = -10$   
 $32x + 12y = 19$

28) \_\_\_\_\_

**Find the slope of the line.**

29)  $y = -0.3x + 9.7$

29) \_\_\_\_\_

30)  $x + 6y = 1$

30) \_\_\_\_\_

31)  $x = -3y$

31) \_\_\_\_\_

32)  $y = 3$

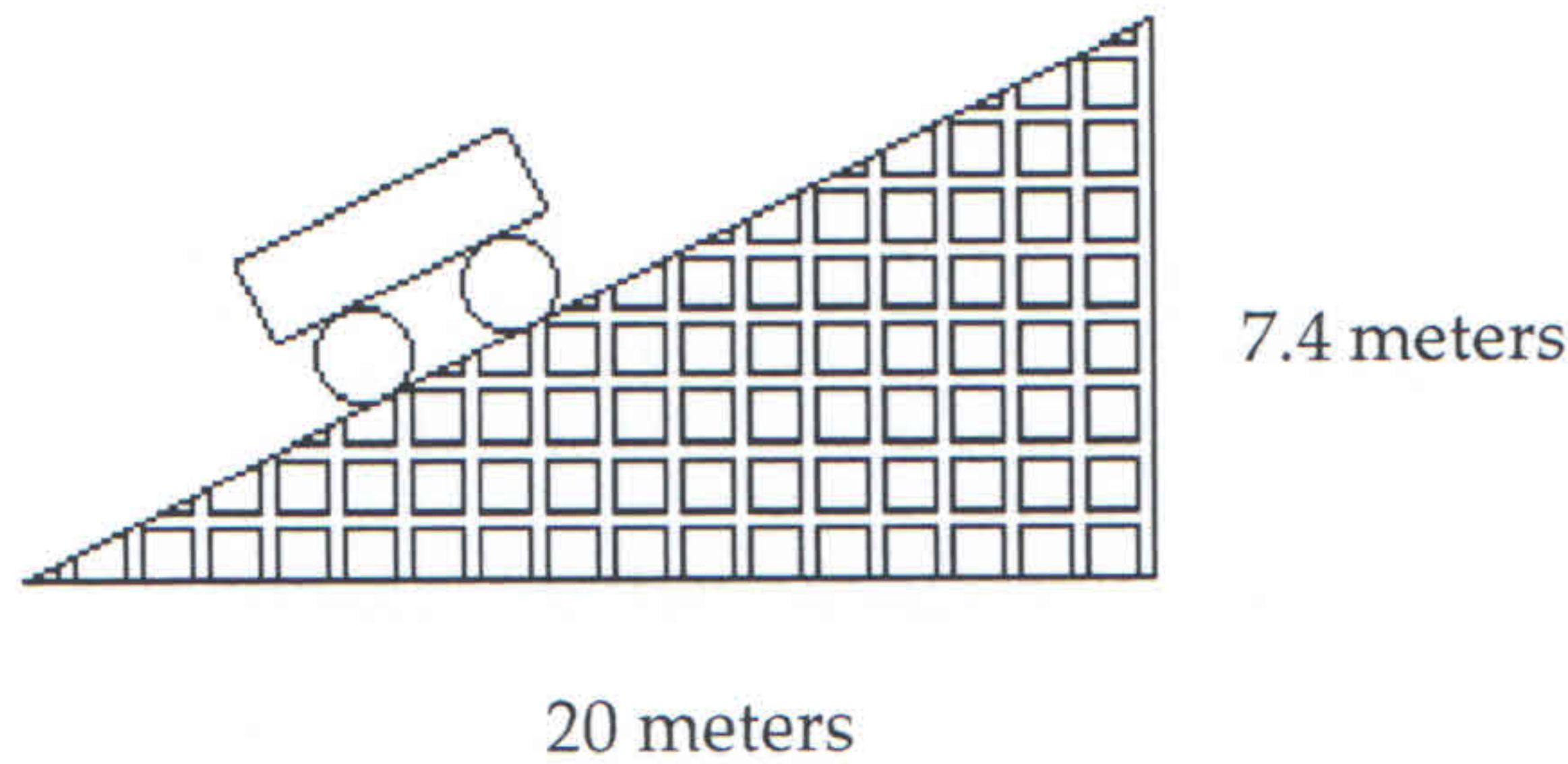
32) \_\_\_\_\_



Solve.

- 33) A section of roller coaster track has the dimensions shown in the diagram. Find the grade of the track, which is the slope written as a percent.

33) \_\_\_\_\_



Find the slope of the line that passes through the given points.

34) (4, -2) and (4, 1)

34) \_\_\_\_\_

35) (3, 6) and (-18, -7)

35) \_\_\_\_\_

36) (1, 0) and (0, -4)

36) \_\_\_\_\_

Find the slopes of the lines that are (a) parallel to and (b) perpendicular to the line passing through the pair of points.

37) (4, 4) and (1, 1)

37) \_\_\_\_\_

38) (8, -6) and (4, 7)

38) \_\_\_\_\_

Find an equation of the line described.

39) Through (-4, 6), perpendicular to the y-axis

39) \_\_\_\_\_

Find an equation of the line.

40) Horizontal line through  $\left(\frac{1}{4}, 0\right)$

40) \_\_\_\_\_

Find an equation of the line described. Write the equation in slope-intercept form if possible.

41) Slope  $-\frac{8}{9}$ , through (4, 2)

41) \_\_\_\_\_

42) Slope  $\frac{8}{9}$ , through (7, 8)

42) \_\_\_\_\_

43) Through (0, 0) and  $\left(3, \frac{1}{2}\right)$

43) \_\_\_\_\_

44) Slope -3, through (-4, -4)

44) \_\_\_\_\_

Write an equation of the line with the given slope,  $m$ , and y-intercept (0,  $b$ ).

45)  $m = -\frac{9}{5}$ ,  $b = \frac{61}{5}$

45) \_\_\_\_\_



46)  $m = -4, b = \frac{1}{2}$

46) \_\_\_\_\_

**Find an equation of the line through the pair of points. Write the equation in the form  $Ax + By = C$ .**

47)  $(-6, -9)$  and  $(-4, 0)$

47) \_\_\_\_\_

48)  $(-6, 6)$  and  $(3, -4)$

48) \_\_\_\_\_

**Solve. Assume the exercise describes a linear relationship.**

49) In 1820 the population of a midwest city was 19,000. By 1830 it had grown to 22,000. Find an equation relating time and population. If the population continues to grow at the same rate, what will the population be in 1856? Give your answer to the nearest whole number.

49) \_\_\_\_\_

50) The total sales made by a salesperson was \$25,000 after 3 months and \$68,000 after 23 months. Find an equation relating time and sales. Use the equation to predict the total sales after 45 months.

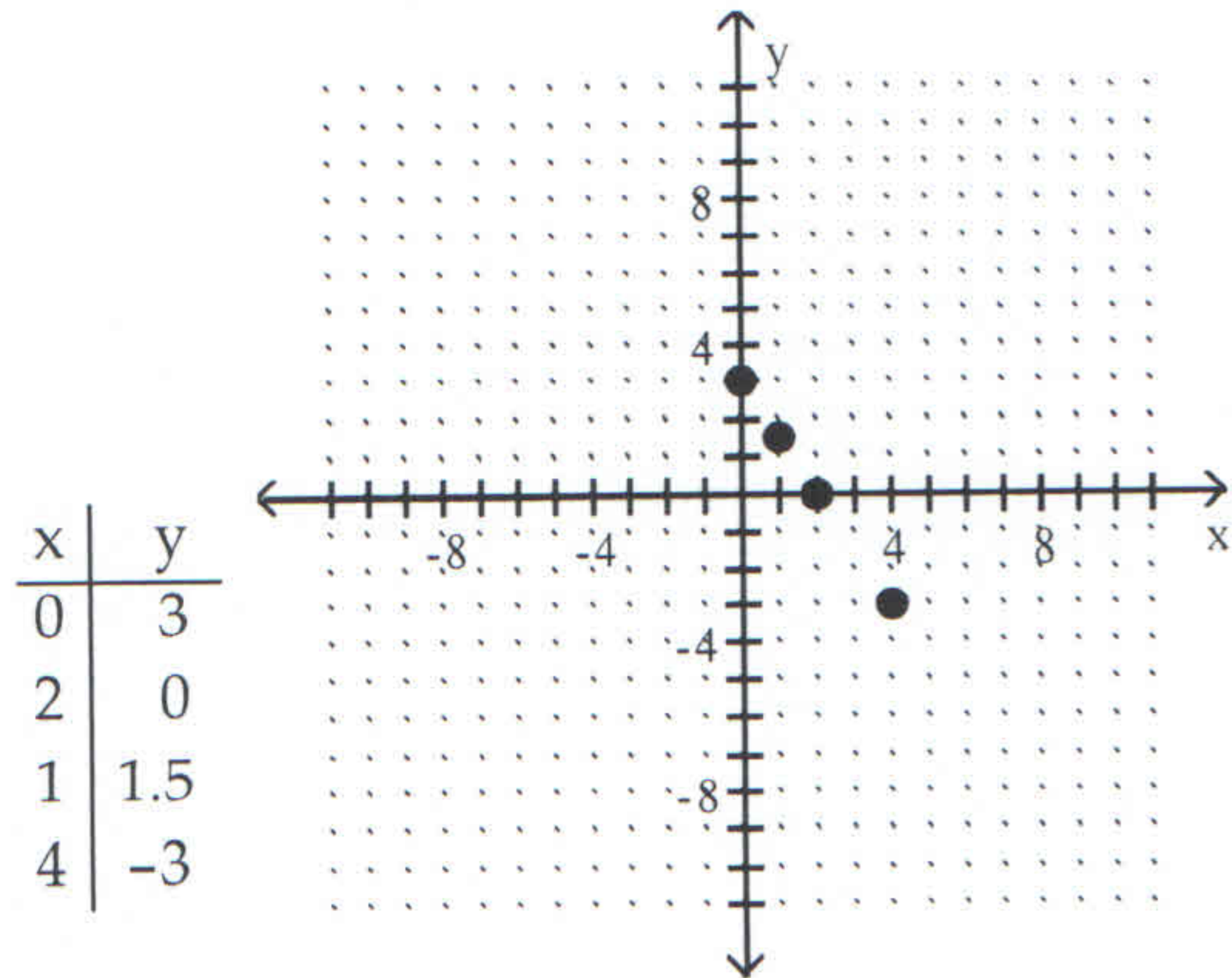
50) \_\_\_\_\_



Answer Key

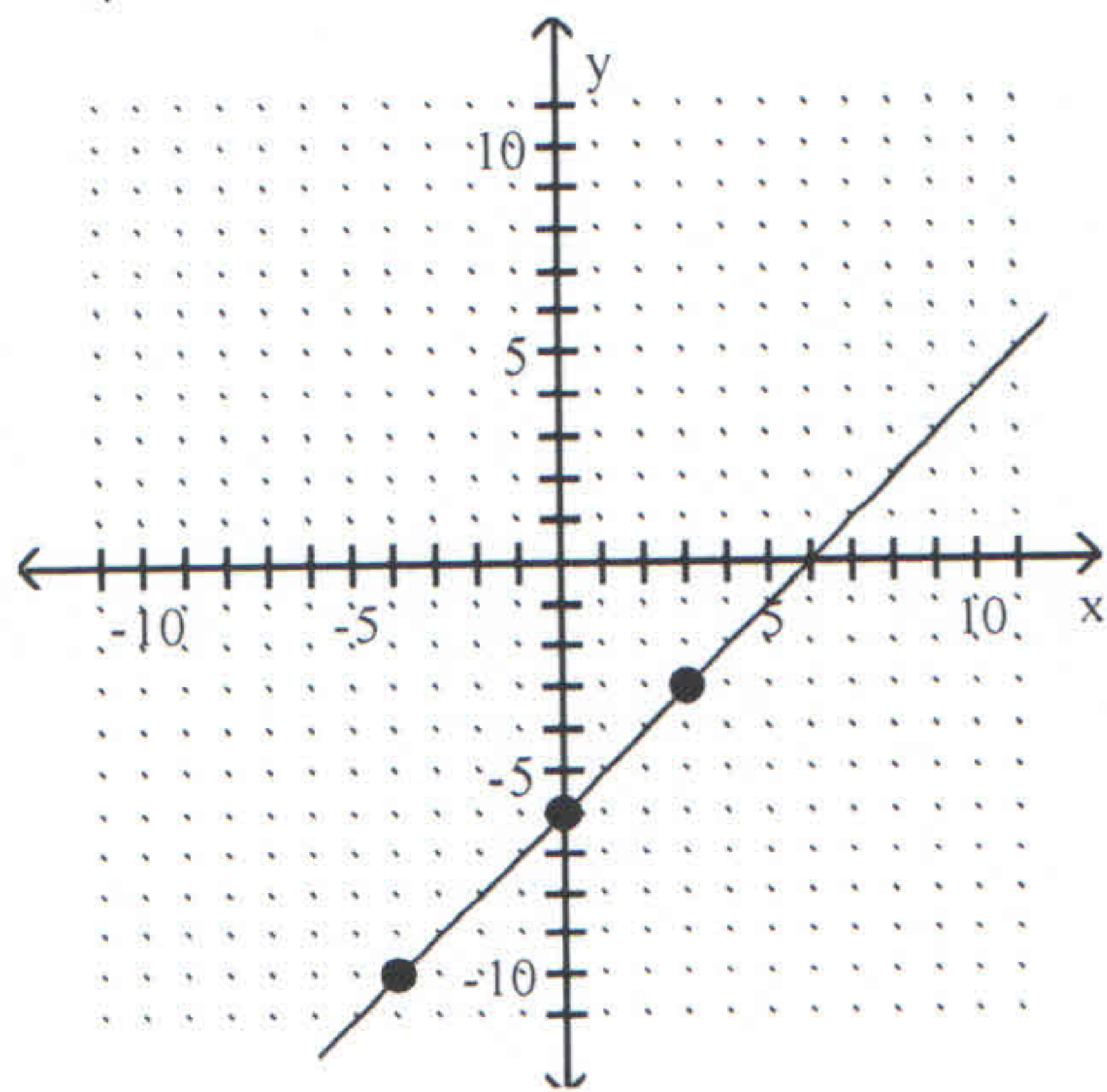
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- 1) yes
- 2) yes
- 3) no
- 4) no
- 5) no
- 6) no
- 7)  $(-3, 8)$   $(2, -2)$   $(0, 2)$
- 8)



- 9) yes
- 10) yes
- 11)

x	y
3	-3
-4	-10
0	-6



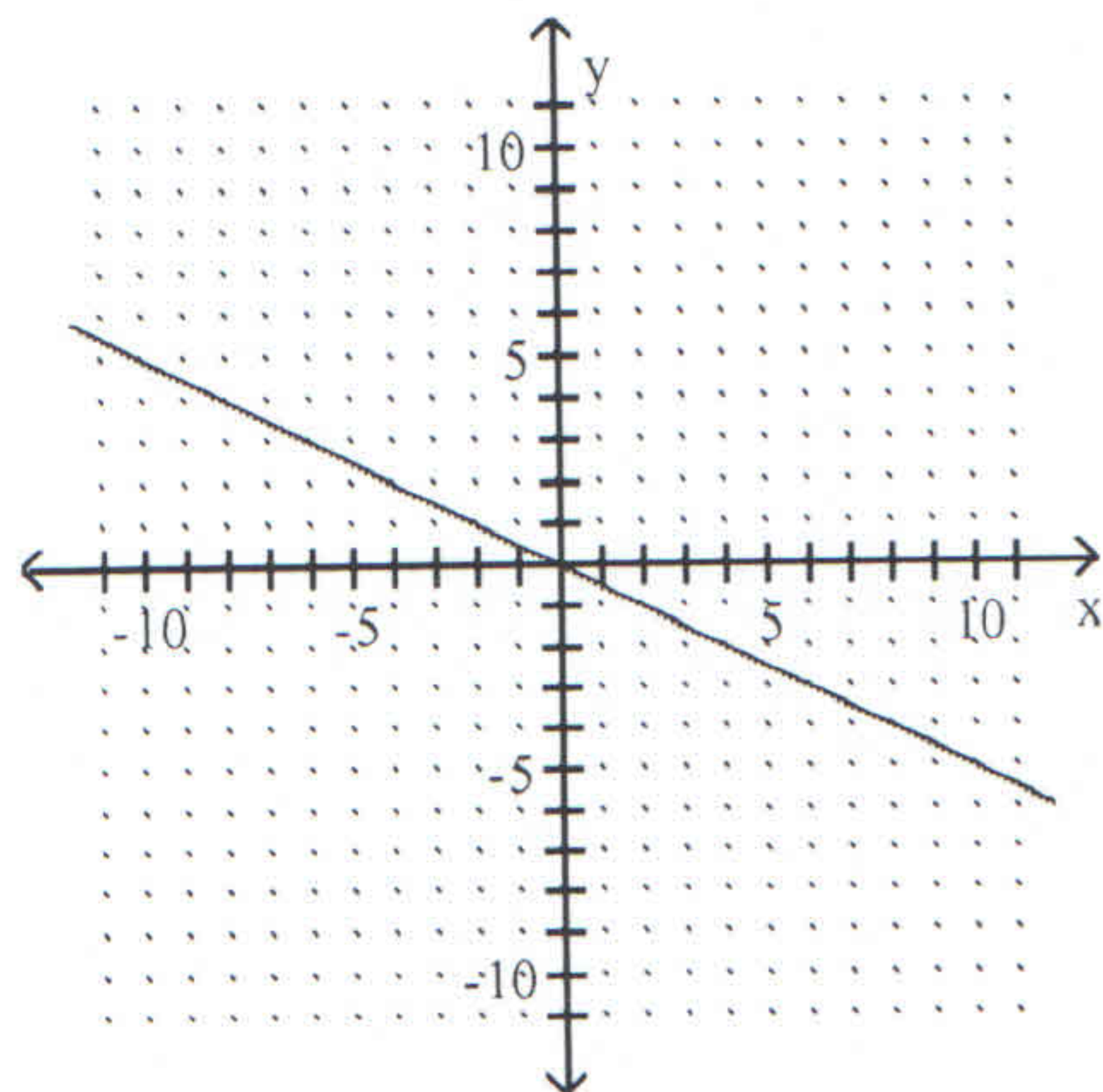
- 12) no
- 13) yes
- 14) yes



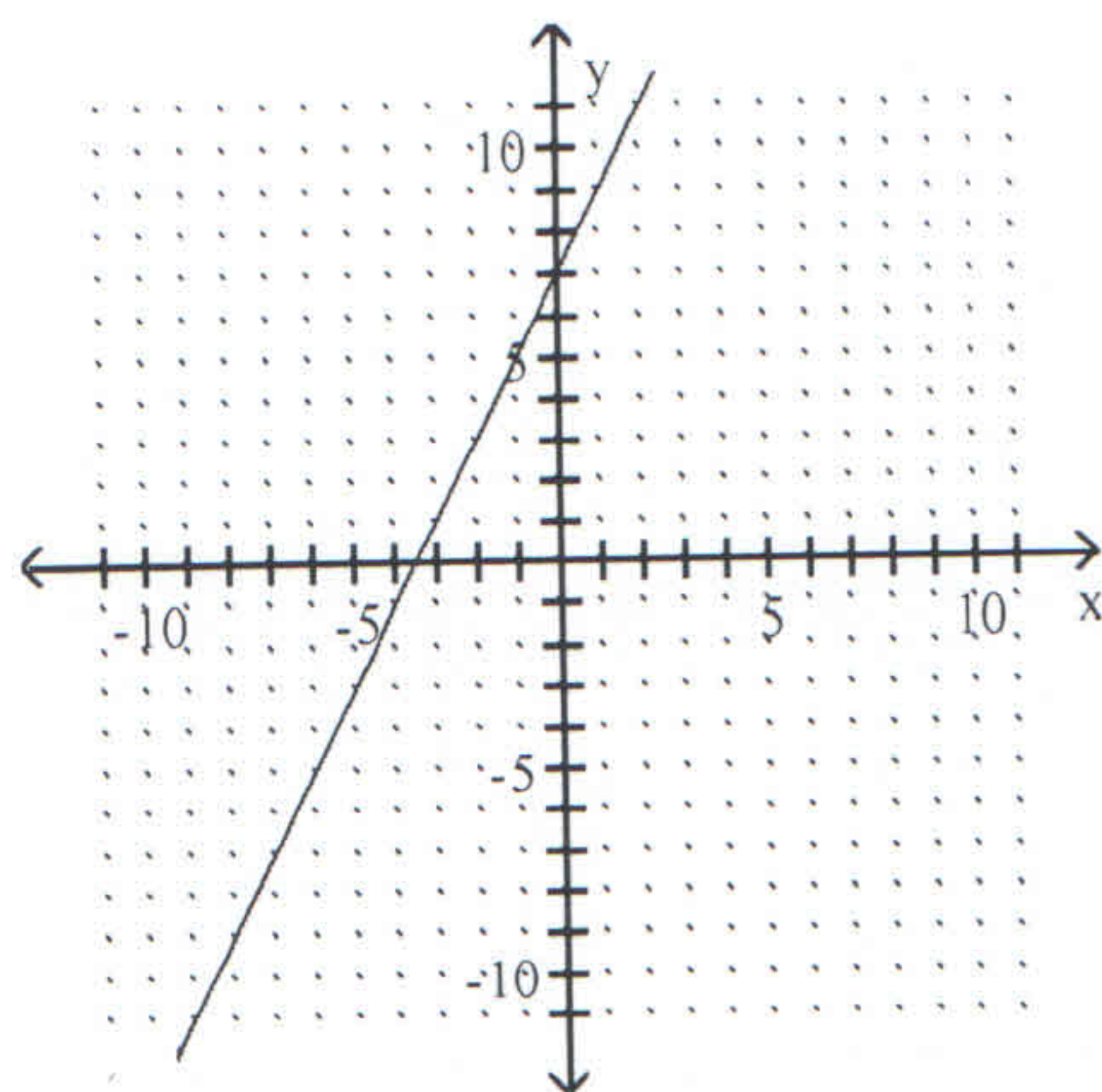
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15)

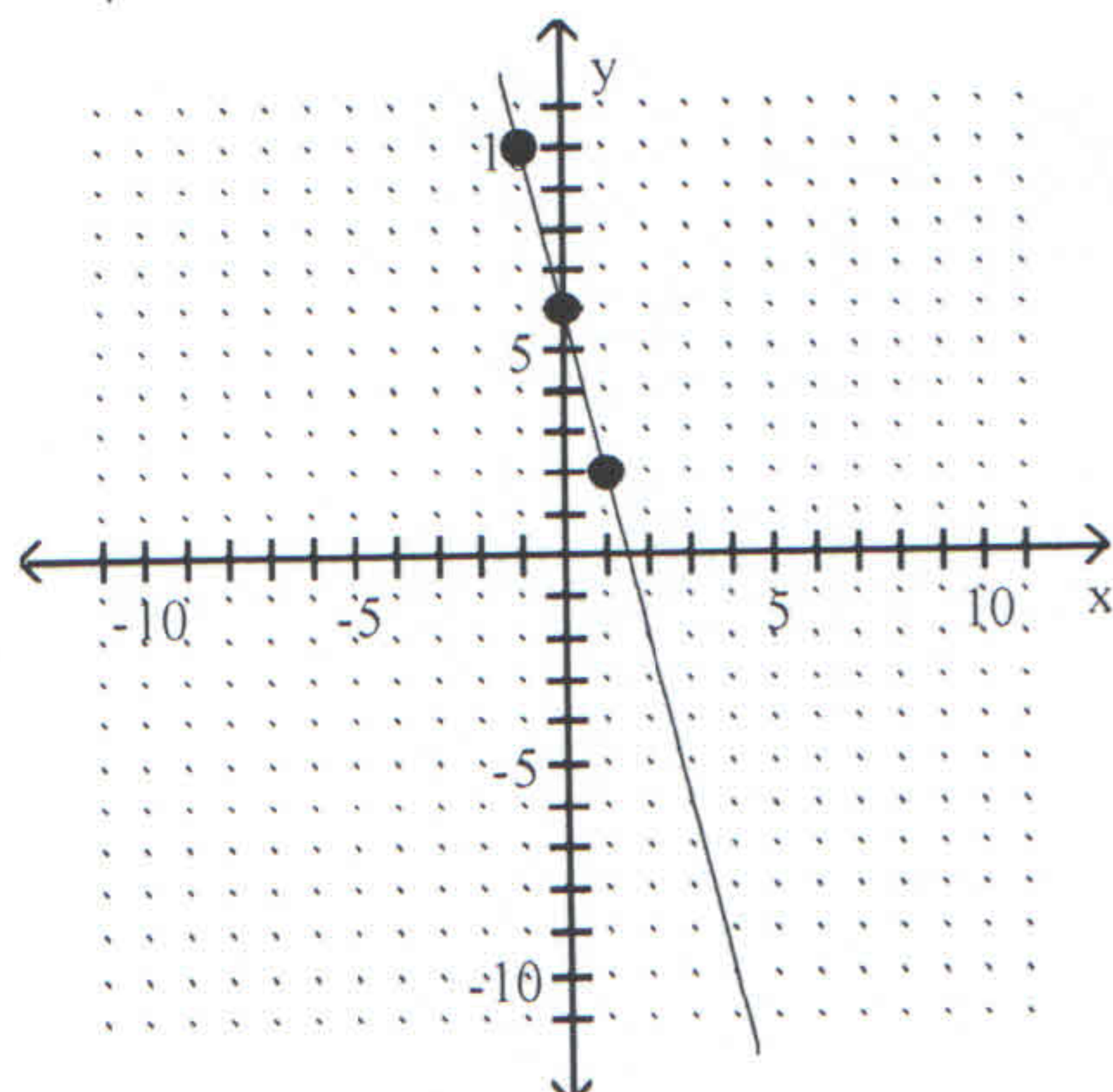


16)



17)

x	y
0	6
1	2
-1	10

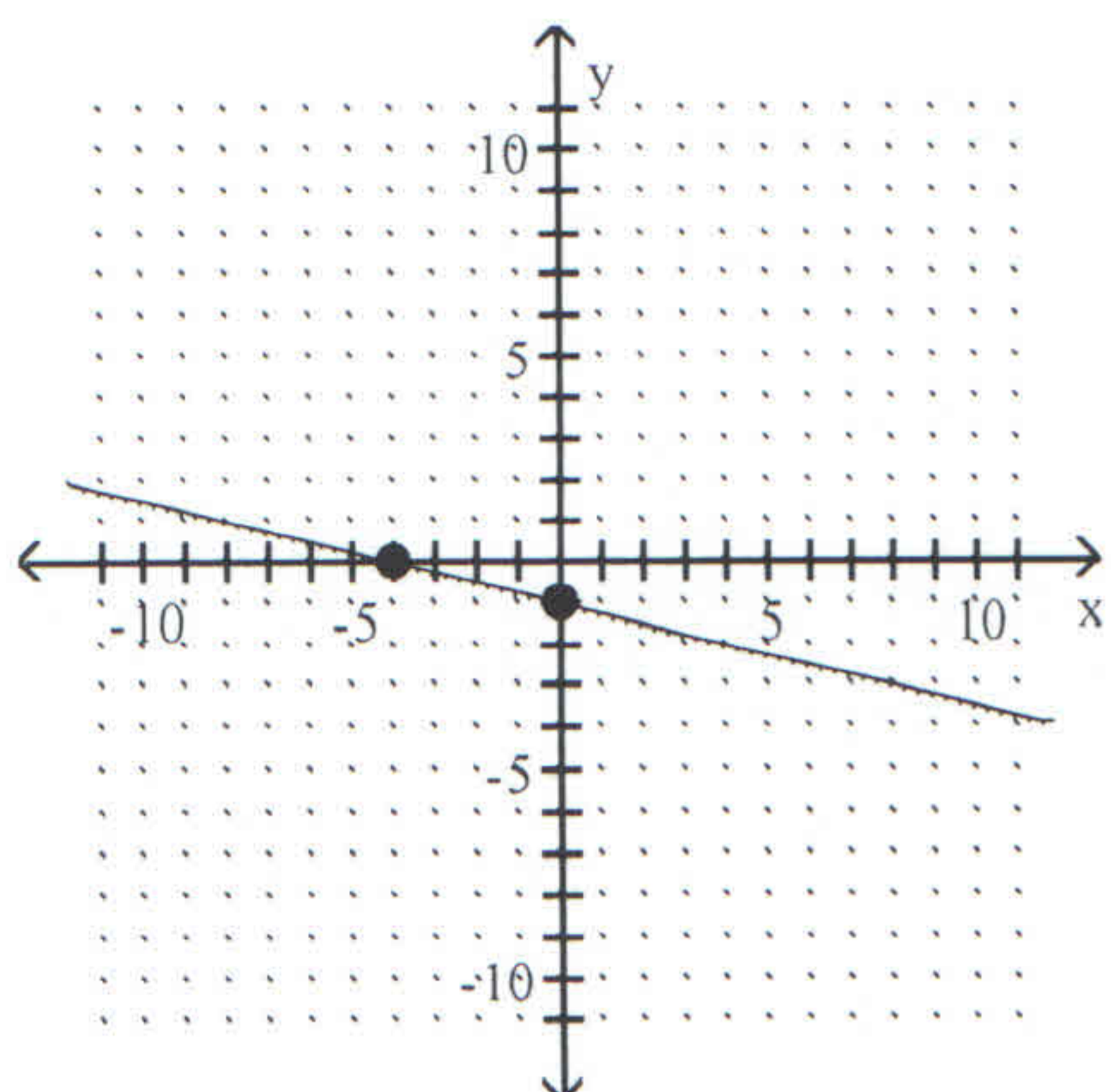




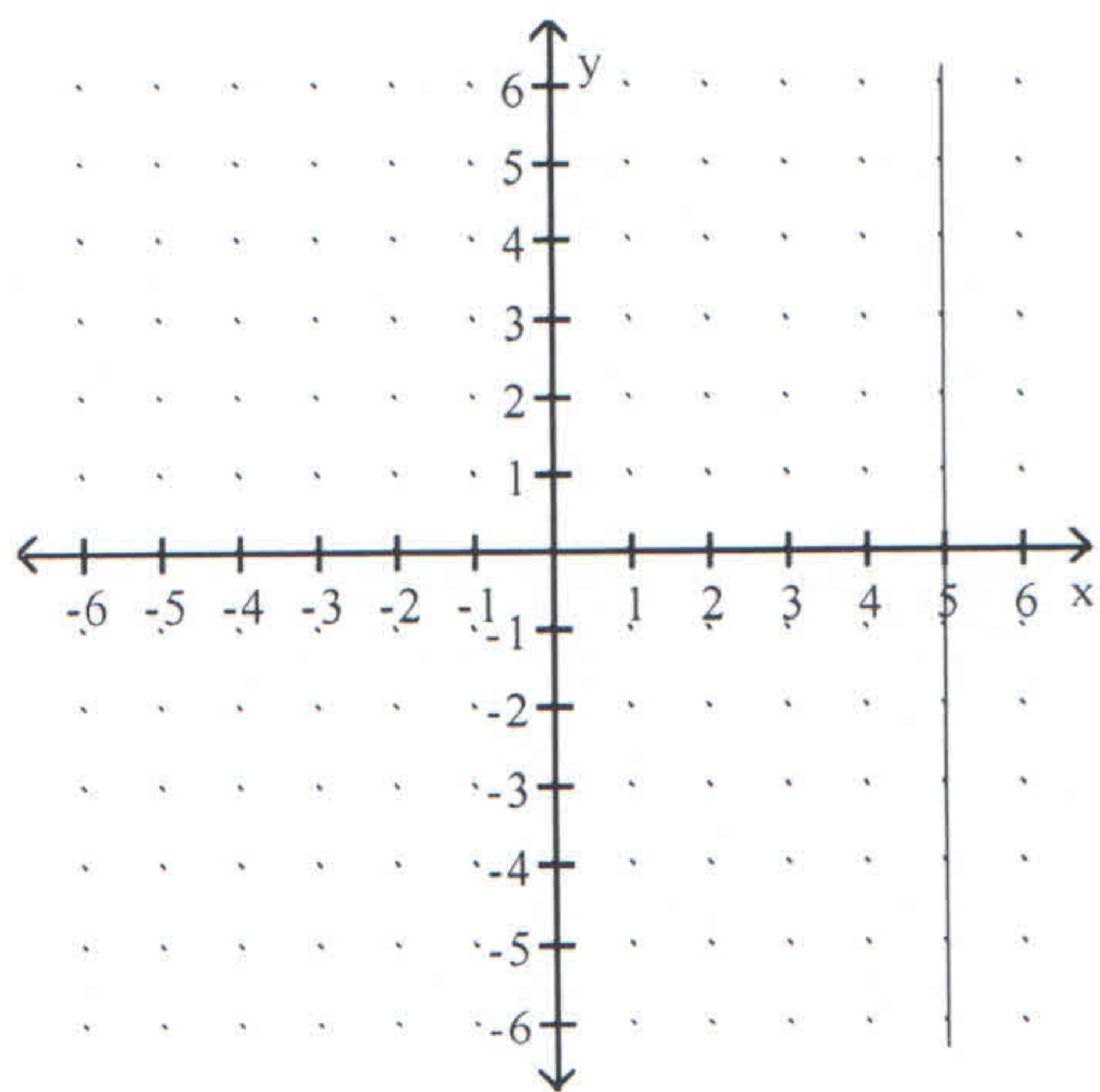
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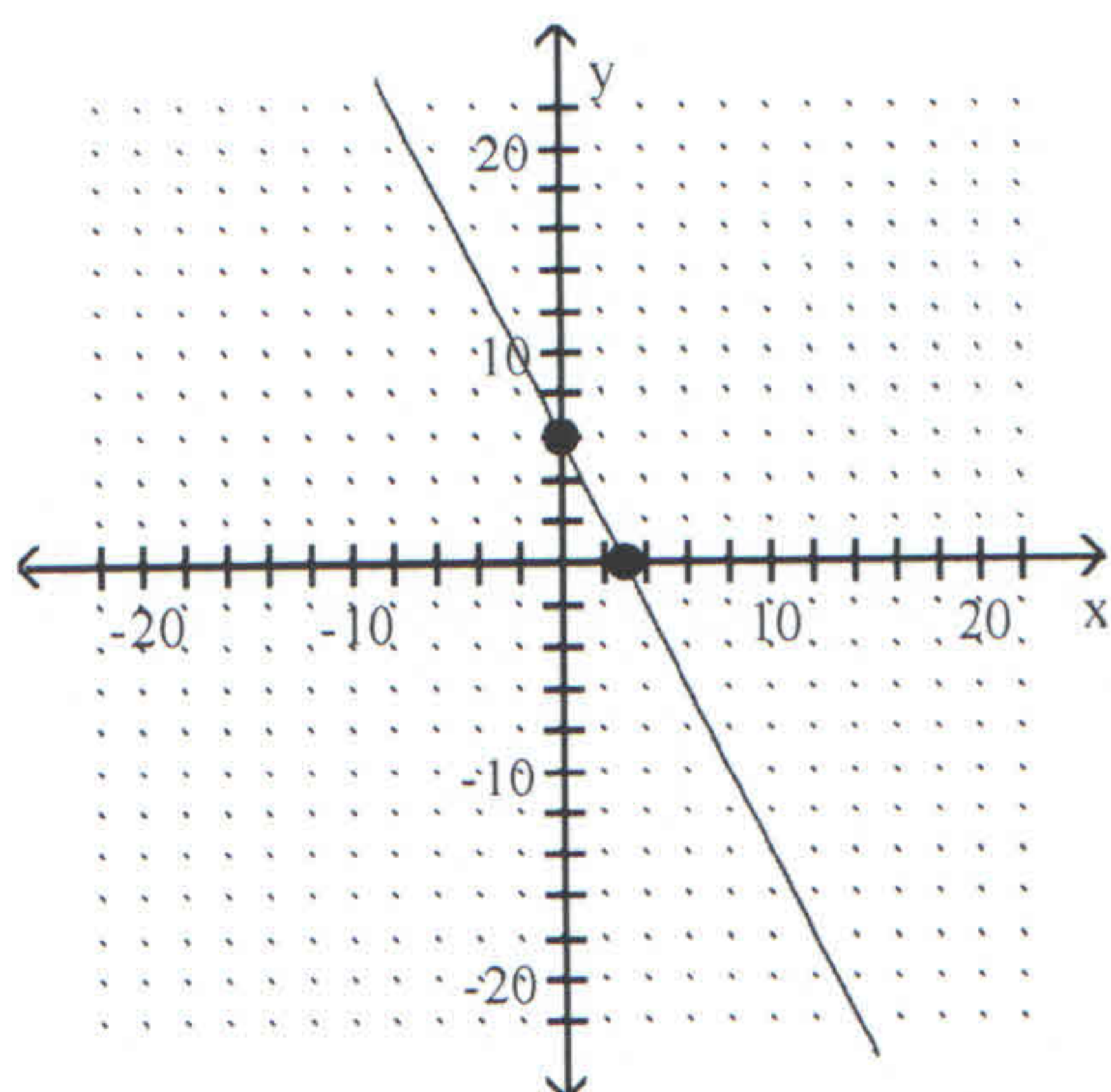
18)



19)



20)

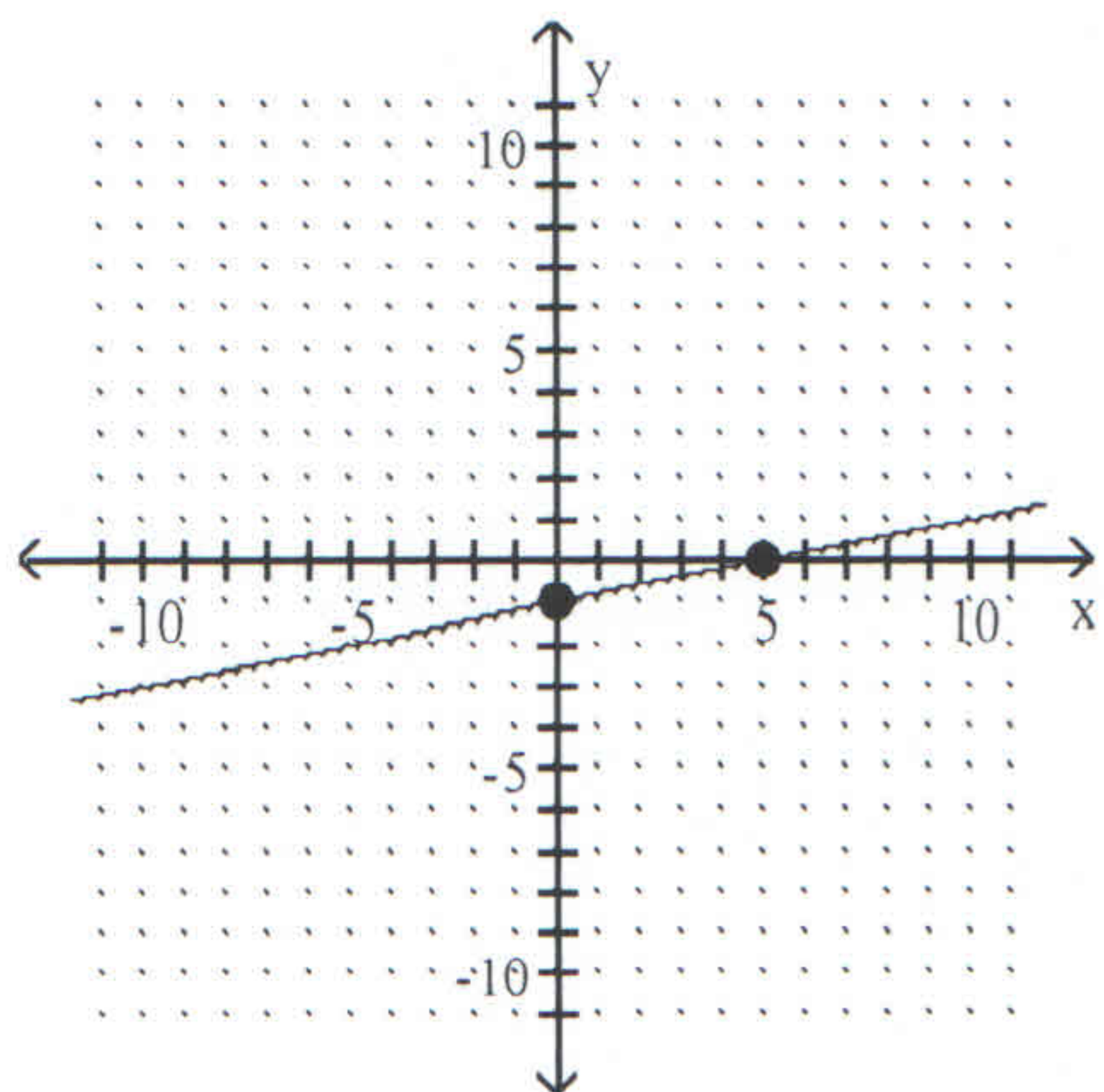




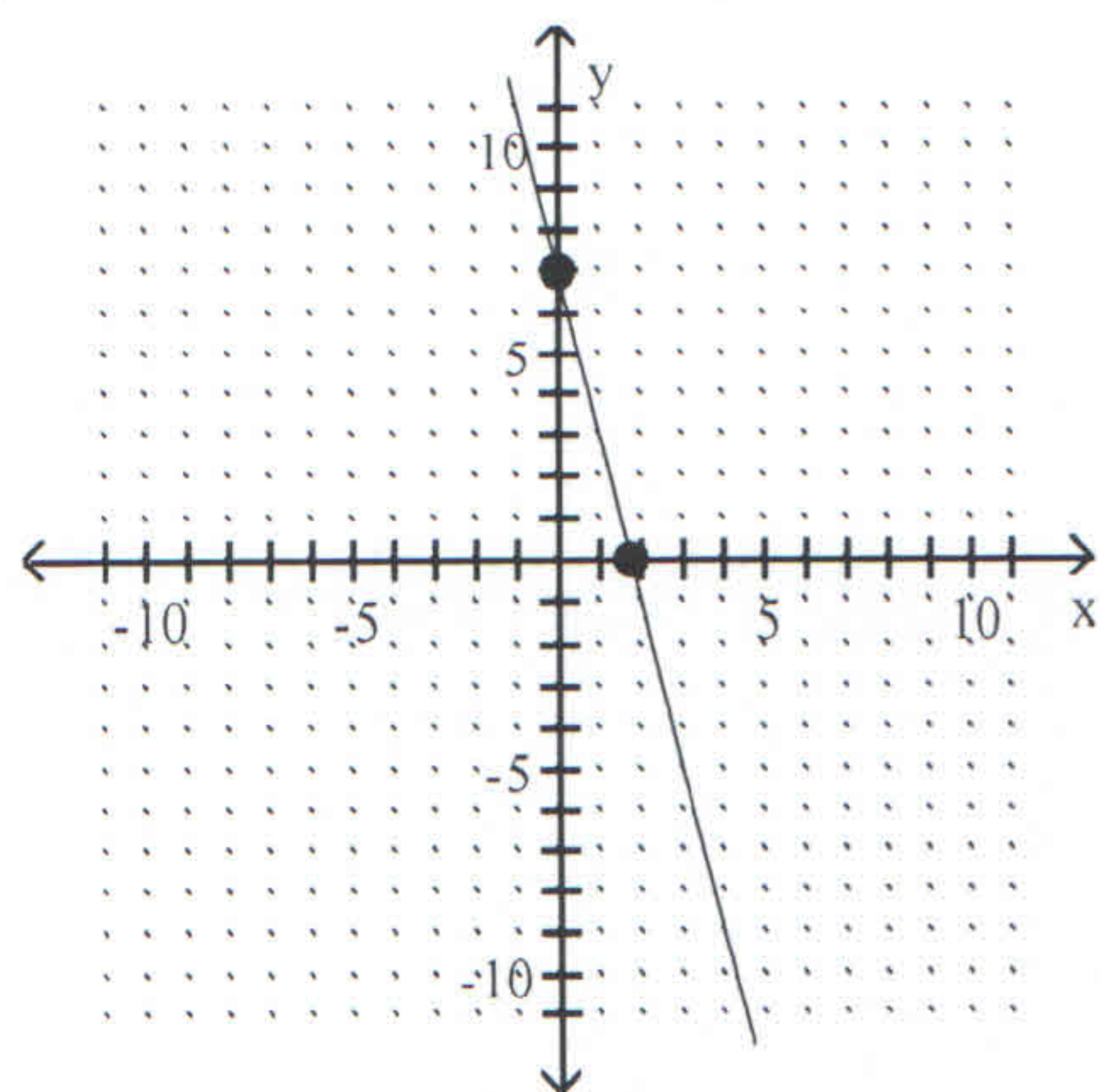
Answer Key

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21)



22)



23) (1, 0), (0, 6)

24) (7, 0), (-7, 0), (0, 8), (0, -8)

25) A

26) parallel

27) perpendicular

28) perpendicular

29)  $m = -0.3$

30)  $m = -\frac{1}{6}$

31)  $m = -\frac{1}{3}$

32)  $m = 0$

33) 37%

34) undefined

35)  $\frac{13}{21}$

36) 4

37) (a) 1; (b) -1

38) (a)  $-\frac{13}{4}$ ; (b)  $\frac{4}{13}$

39)  $y = 6$

40)  $y = 0$



Answer Key

Testname: MAT1033 - REVIEW 1

$$41) y = -\frac{8}{9}x + \frac{50}{9}$$

$$42) y = \frac{8}{9}x + \frac{16}{9}$$

$$43) y = \frac{1}{6}x$$

$$44) y = -3x - 16$$

$$45) y = -\frac{9}{5}x + \frac{61}{5}$$

$$46) y = -4x + \frac{1}{2}$$

$$47) 9x - 2y = -36$$

$$48) -10x - 9y = 6$$

$$49) 29,800$$

$$50) \$115,300$$