

# Unit 4 Test Study Guide

## (Functions & Linear Relationships)

Name: \_\_\_\_\_

Date: \_\_\_\_\_ Per: \_\_\_\_\_

### Topic 1: Relations & Functions

**Directions:** Identify the domain and range of each relation, then determine if the relation is a function.

1.  $\{(-2, 6), (-5, -1), (3, 7), (-5, 0)\}$

Domain: \_\_\_\_\_

Range: \_\_\_\_\_

Function? \_\_\_\_\_

2.

x	0	4	7	10	13
y	-5	-5	-5	-5	-5

Domain: \_\_\_\_\_

Range: \_\_\_\_\_

Function? \_\_\_\_\_

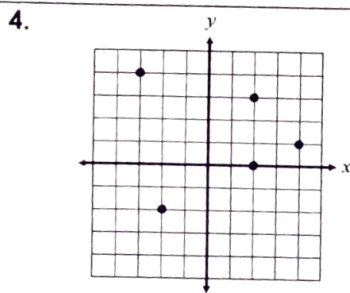
3.

x	-3	-2	-1	0	1
y	-27	-8	-1	0	1

Domain: \_\_\_\_\_

Range: \_\_\_\_\_

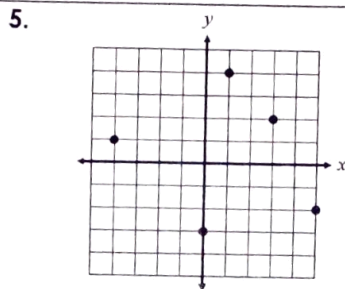
Function? \_\_\_\_\_



Domain: \_\_\_\_\_

Range: \_\_\_\_\_

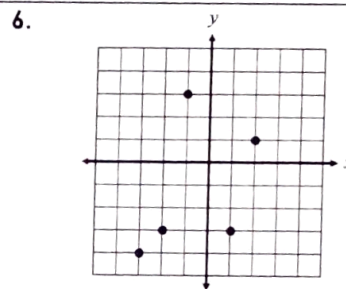
Function? \_\_\_\_\_



Domain: \_\_\_\_\_

Range: \_\_\_\_\_

Function? \_\_\_\_\_



Domain: \_\_\_\_\_

Range: \_\_\_\_\_

Function? \_\_\_\_\_

### Topic 2: Equations as Functions

**Directions:** Given the function and its domain, find the range.

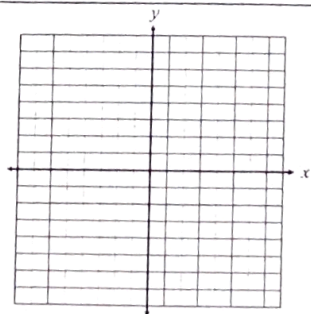
7.  $y = 5x + 11$ ; domain =  $\{-4, -1, 0\}$

8.  $y = 9 - \frac{1}{2}x$ ; domain =  $\{-6, -2, 8\}$

**Directions:** Complete each function table, then graph.

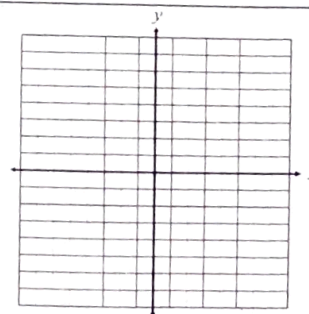
9.  $y = -2x + 7$

x	y
0	
3	
4	
6	



10.  $y = -x - 4$

x	y
-8	
-5	
1	
3	

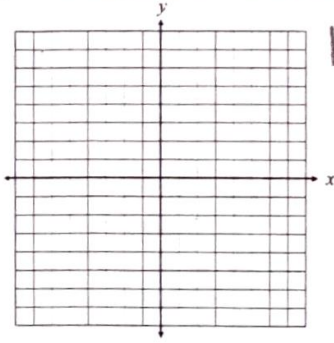


Identify the slope and y-intercept of the line, then graph the equation.

11.  $y = x - 4$

$m =$  \_\_\_\_\_

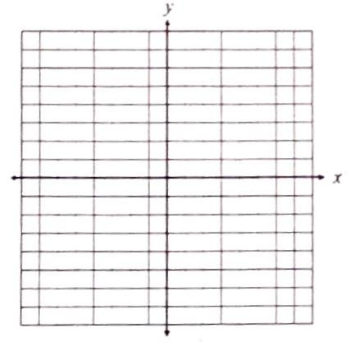
$b =$  \_\_\_\_\_



12.  $y = -\frac{1}{4}x + 3$

$m =$  \_\_\_\_\_

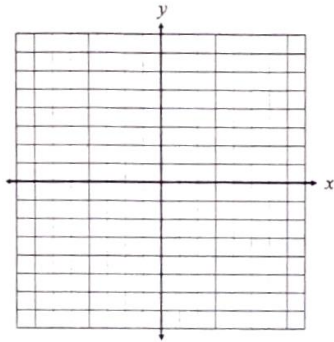
$b =$  \_\_\_\_\_



13.  $y = \frac{5}{3}x + 2$

$m =$  \_\_\_\_\_

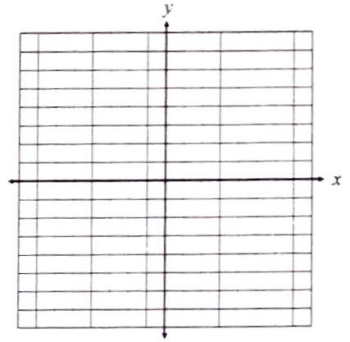
$b =$  \_\_\_\_\_



14.  $y = 3x - 7$

$m =$  \_\_\_\_\_

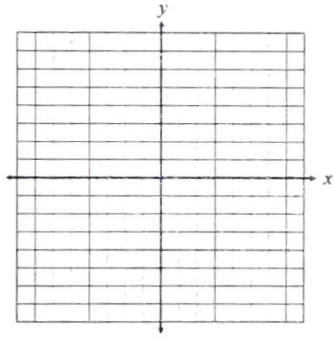
$b =$  \_\_\_\_\_



15.  $y = -\frac{7}{2}x$

$m =$  \_\_\_\_\_

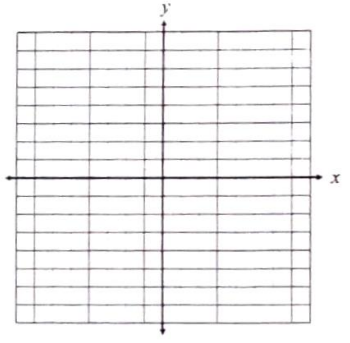
$b =$  \_\_\_\_\_



16.  $y = 4 - 5x$

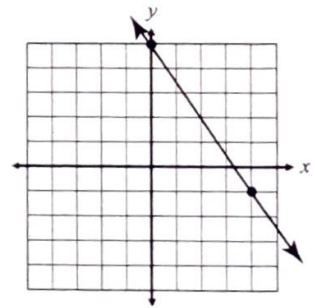
$m =$  \_\_\_\_\_

$b =$  \_\_\_\_\_



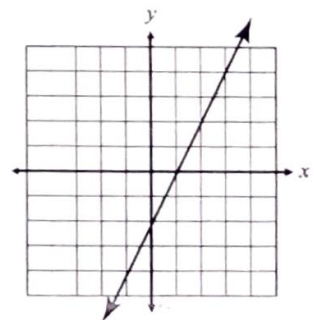
17. Write the equation of the line shown on the graph.

Equation: \_\_\_\_\_



18. Choose the equation that best fits the line shown on the graph.

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



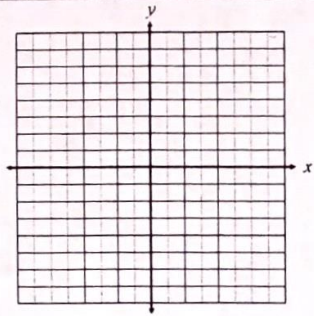


**Topic 6: Graphing Linear Equations**

**Directions:** Graph each equation. Show all work for converting standard form to slope-intercept form.

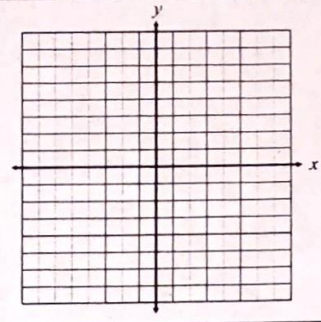
19.

$y = -x + 3$



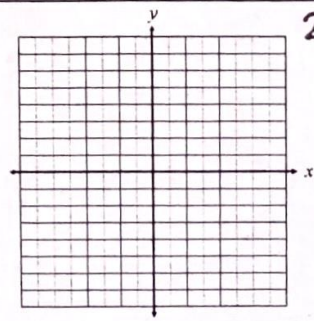
20.

$y = \frac{7}{5}x - 6$



21.

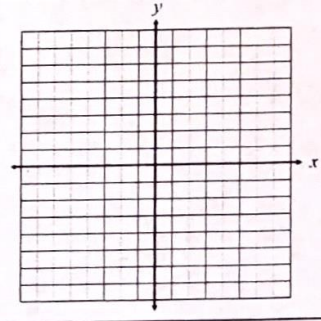
$2x + y = -3$



22.

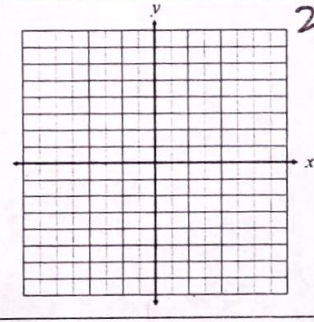
$x - y = 5$

use intercepts.



23.

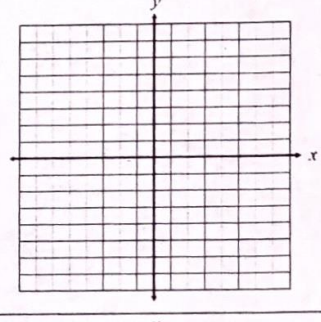
$4x - 3y = -21$



24.

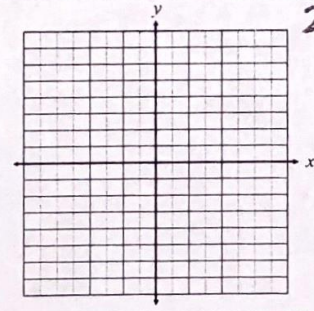
$-x - 4y = 0$

use intercepts.



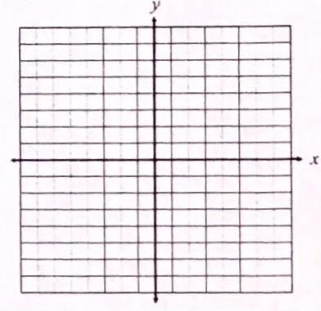
25.

$y = 6$



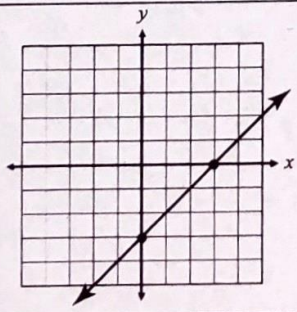
26.

$x = -1$

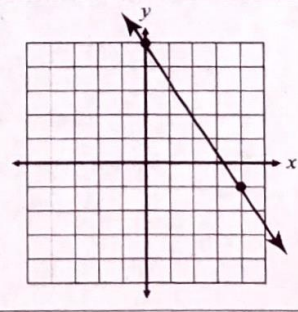


**Directions:** Write the equation of the line shown on the graph in slope-intercept form.

27.



28.



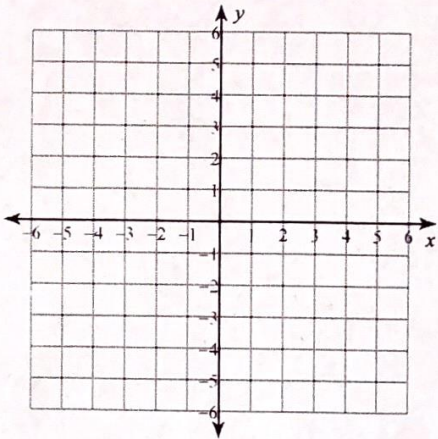


Test Review

Sketch the graph of each linear inequality.

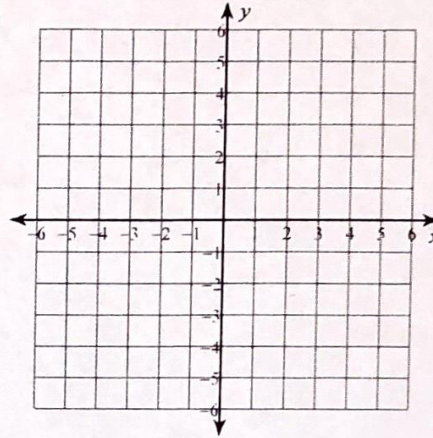
29.

$$y < x + 3$$



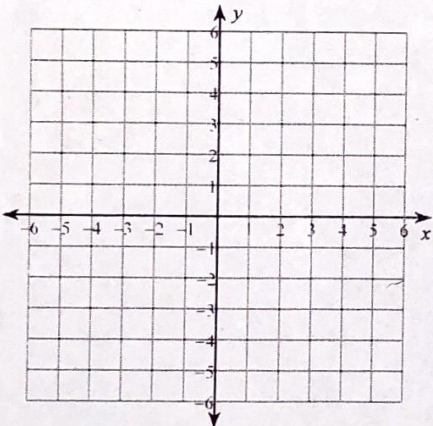
30.

$$y \geq \frac{5}{2}x + 3$$



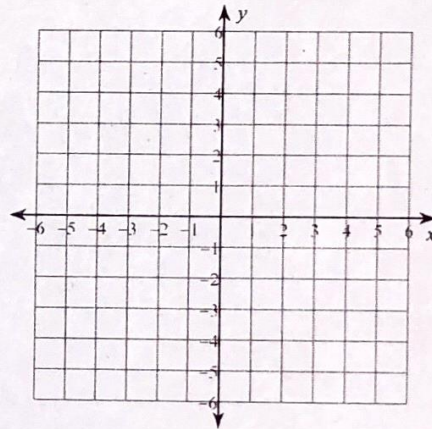
31.

$$y \leq \frac{9}{5}x + 5$$



32.

$$x \geq -5$$



Write the slope-intercept form of the equation of each line given the slope and y-intercept.

33.

Slope =  $\frac{3}{5}$ , y-intercept = -1

34.

Slope =  $\frac{5}{3}$ , y-intercept = 3

35.

Slope =  $-\frac{1}{2}$ , y-intercept = -2

36.

Slope = 5, y-intercept = -4