

5.4 Worksheet #1

Algebra I
Slope-intercept form

Name _____

Hour _____ Date _____

Complete the chart below:

Equation	slope	y intercept
1. $Y = 3x + 1$	3	1

2. $Y = -6x - 2$

3. $Y = -2x$

4. $Y = 4x + 3$

5. $Y = \frac{-3}{4}x - 2$

6. $y = 7$ $y = 0x + 7$

7. $y = \frac{1}{2}x + 4$

8. Given 2 points on the line, find the slope of the line. Remember to use the formula $\frac{Y_2 - Y_1}{X_2 - X_1}$.

A
(3,2)
(5,7)

B
~~(5,7)~~

Slope

$$\frac{2-7}{3-5}$$

(-4,5)

(-2,1)

(10,2)

(7,3)

(1,0)

(-4,0)

(-3,-3)

(6,7)

(-8,2)

(8,2)

Algebra I

Name _____
Hour _____ Date _____

Solve each equation. Show your work.

1. $x - 8 = 12$ $x = 20$
 $\begin{array}{r} +8 \\ +8 \end{array}$

2. $x + 7 = 34$ _____

3. $x + 17 = -20$ _____

4. $x - 9 = 40$ _____

5. $x - 13 = -10$ _____

6. $x + 2 = 8$ _____

7. $-8 + x = 16$ _____

8. $15 = x - 5$ _____

9. $x + 2 = -20$ _____

10. $x + 13 = 45$ _____

11. $4 + x = 26$ _____

12. $20 = x - 8$ _____

13. $x + 56 = 100$ _____

14. $x - 2.4 = 8.2$ _____

15. $x + 15 = 29$ _____

16. $x - 4 = -1$ _____

17. $x + 2 = -10$ _____

18. $x + 5 = 33$ _____

19. $x - 9 = -11$ _____

20. $40 = x + 9$ _____

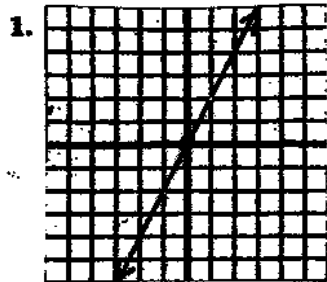
21. List 3 places that you would see slopes outside of the school.

1.

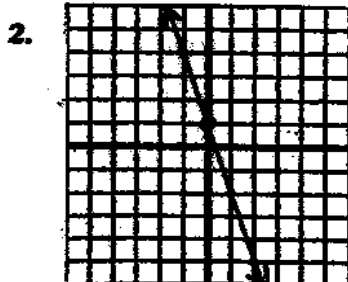
2.

3.

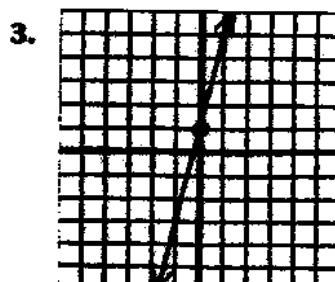
Choose the equation that matches the graph shown. Write the letter of the equation on the blanks below.



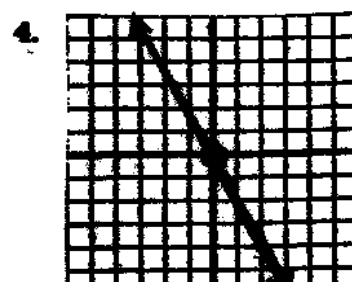
- G $y = 2x + 1$
- M $y = 2x - 1$
- O $y = -2x$
- E $y = -2x + 1$



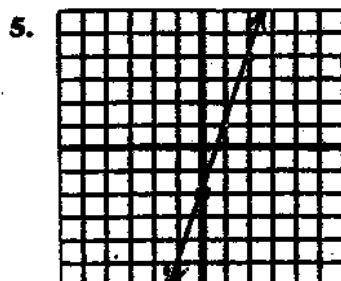
- S $y = -3x$
- E $y = 3x$
- R $y = -3x + 1$
- T $y = 3x - 1$



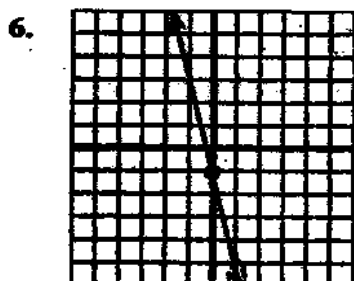
- N $y = 4x$
- A $y = 4x + 1$
- E $y = 4x - 1$
- P $y = -4x - 1$



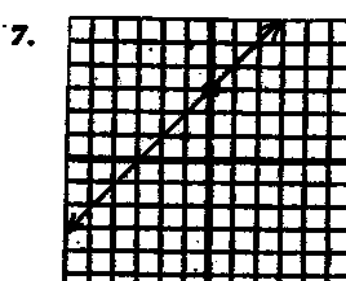
- R $y = 2x$
- P $y = -2x + 1$**
- E $y = 2x + 3$
- T $y = -2x + 3$



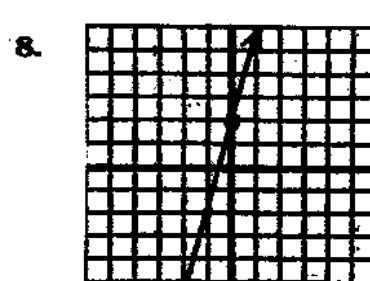
- T $y = -3x$
- A $y = -3x + 2$
- R $y = 3x$
- H $y = 3x - 2$



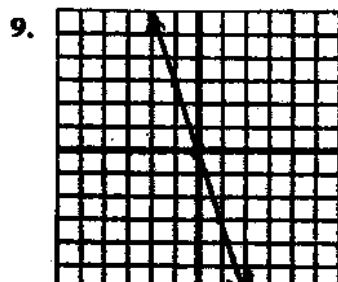
- N $y = 4x$
- E $y = -4x + 1$
- O $y = -4x - 1$
- S $y = 4x + 1$



- K $y = x - 3$
- L $y = -x - 3$
- F $y = x + 3$
- E $y = -x + 3$



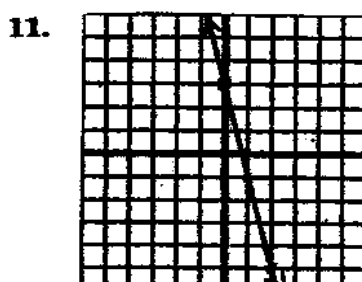
- N $y = -2x + 4$
- S $y = 2x + 4$
- A $y = 4x + 2$
- T $y = -4x + 2$



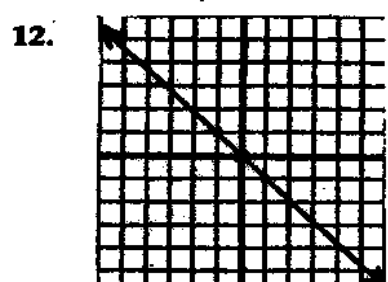
- N $y = 3x$
- L $y = -3x$
- E $y = 3x + 1$
- R $y = -3x + 1$



- M $y = 5x$
- I $y = -5x$
- R $y = 5x + 2$
- S $y = -5x - 2$



- S $y = 4x$
- R $y = -4x$
- T $y = 4x + 3$
- N $y = -4x + 3$



- N $y = x$
- E $y = -x$
- P $y = x + 2$
- T $y = -x + 2$

1 2 3 4 5 6 7 8 9 10 11 12

$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

Find the slope of \overline{AB} for the given points.

- | | | |
|-----------------------|------------------------|------------------------|
| 1. A(1, 1), B(5, 4) | 2. A(5, 7), B(9, 8) | 3. A(3, 6), B(6, 8) |
| 4. A(-2, -3), B(9, 3) | 5. A(-4, -2), B(5, 1) | 6. A(4, 3), B(1, 9) |
| 7. A(5, 2), B(4, 7) | 8. A(-5, -2), B(4, -1) | 9. A(7, -1), B(-5, -4) |

In the equation $y = mx + b$, what is determined by the

m: _____

b: _____

Give the slope and the y-intercept of the line with the given equation.

1. $y = \frac{1}{3}x + 6$

slope = _____

y-intercept = _____

2. $y = \frac{3}{4}x + 5$

slope = _____

y-intercept = _____

3. $y = -\frac{4}{5}x + 9$

slope = _____

y-intercept = _____

4. $y = 3x$

slope = _____

y-intercept = _____

5. $y = -\frac{2}{3}x - 7$

slope = _____

y-intercept = _____

6. $y = x + 5$

slope = _____

y-intercept = _____

Write an equation for the line with the given slope, m , and y-intercept, b .

7. $m = 3, b = 5$

8. $m = -4, b = -6$

9. $m = \frac{2}{3}, b = -1$

Describe the graph of each line.

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

slope = _____

y-intercept = _____

11. $y = -\frac{4}{5}x + 3$

slope = _____

y-intercept = _____

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

slope = _____

y-intercept = _____

13. $y = 2x + 4$

slope = _____

y-intercept = _____

14. $y = 4x - 2$

slope = _____

y-intercept = _____

15. $y = -3x + 2$

slope = _____

y-intercept = _____

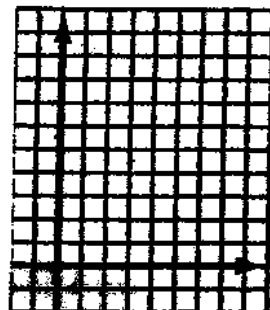
16. Plot the points $A(1, 1)$, $B(4, 7)$, and $C(4, 10)$. Connect A and B . Connect A and C .

Which segment appears to have the steeper slope, \overline{AB} or \overline{AC} ?

Justify your conclusion by comparing the slope of \overline{AB} with the slope of \overline{AC} .

slope of \overline{AB} =

slope of \overline{AC} =



Algebra I
5.4 Worksheet #3
Slope-Intercept Form

NAME: _____
DATE: _____ HOUR: _____

Part A. Definitions. Multiple Choice.

1. Which does not describe "slope"?
 - a. the coefficient of x in the equation $y = mx + b$ _____
 - b. the steepness of a line _____
 - c. a rate of change _____
 - d. the x -intercept _____

2. Which does not describe a "y-intercept"?
 - a. the constant in the equation $y = mx + b$ _____
 - b. where the graph crosses the y -axis _____
 - c. the steepness of a line _____
 - d. $(0, b)$ from the equation $y = mx + b$ _____

Part B. Find the slope between the two points. Simplify and reduce all fractions.

1. $(-3, 9)$ and $(-6, 5)$ _____

2. $(1, 1)$ and $(6, 6)$ _____

3. $(8, 11)$ and $(-7, 5)$ _____

Part C. Find the slope for each of the given lines. Simplify and reduce all fractions.

- | | |
|----------------------------|-------------------------------|
| 1. rise 20, run 4 _____ | 3. rise 8, run 16 _____ |
| 2. rise 2, run -10 _____ | 4. rise -1 , run -7 _____ |

Part D. Write the coordinates where each line crosses the y -axis.

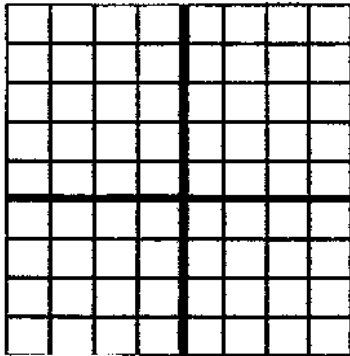
$(0, b)$

- | | |
|------------------------|----------------------------------|
| 1. $y = x + 7$ _____ | 3. $y = -2x - \frac{1}{4}$ _____ |
| 2. $y = -9 + 4x$ _____ | 4. $y = -x$ _____ |

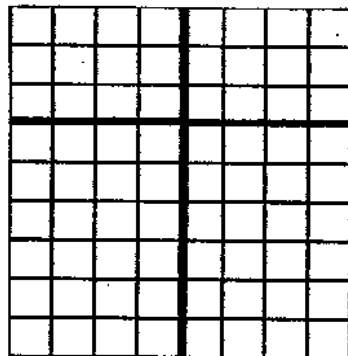
Part E. Write the Slope-Intercept Form of an Equation.

1. slope is $-\frac{1}{2}$, y-intercept is 9 _____
2. slope is 3, contains the point (0, -5) _____
3. slope is -2 , passes through the origin _____

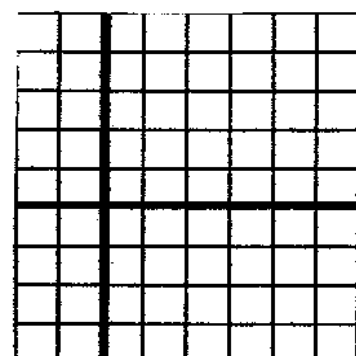
Part F. Graph each of the following lines from their equations:



1. $y = \frac{1}{2}x + 2$

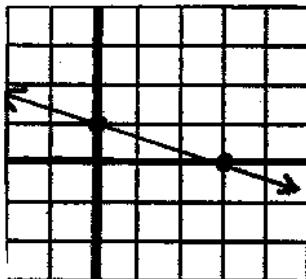


2. $y = -2x - 3$

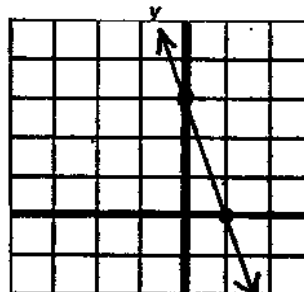


3. $y = -\frac{1}{4}x$

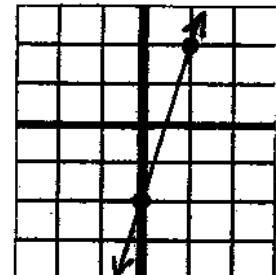
Part G. Write the slope-intercept equation of each line from its graph.



1. _____



2. _____



3. _____

Part H. Describe what is the same and what is different from the two lines given their equations.

Circle your choice for each.

1. $y = 5x$
 $y = -5x$ same slope / y-intercept different slope / y-intercept

2. $y = 2x - 1$
 $y = 3x - 1$ same slope / y-intercept different slope / y-intercept