

Basic Linear Functions

1 Fill in the blank.
In the equation $y = mx + b$,
'm' is the _____ of the line
and 'b' is the _____.

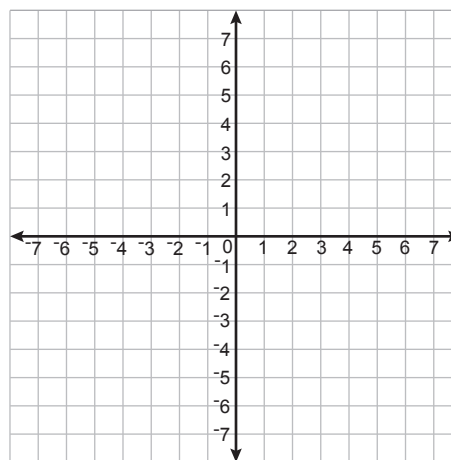
2 What are the slopes of these linear functions?
 $y = 4x - 3$ _____
 $y = -\frac{1}{3}x$ _____

3 Complete the table for this linear function.

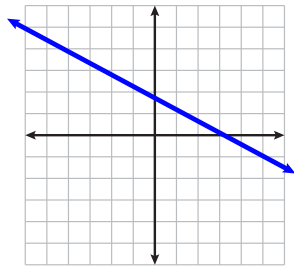
$y = 2x - 3$

Input x	Output y
5	
2	
1	
0	
-2	

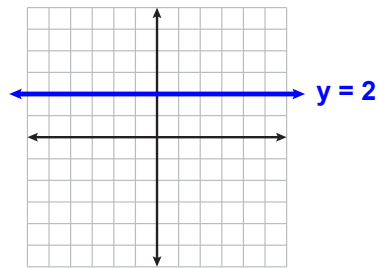
4 Graph the function from problem 3



5 Does this line have a positive or a negative slope?



6 What is the slope of this line?



7 Find the slope and y-intercept of this linear function.
(Hint: rearrange into $y = mx + b$ form.)

$$2(x - 3) = y + 1$$

8 Find the slope and y-intercept of this linear function.
(Hint: rearrange into $y = mx + b$ form.)

$$2x + x = 4(y - 1)$$

Basic Linear Functions

1 Fill in the blank.

In the equation $y = mx + b$,
'm' is the slope of the line
and 'b' is the y-intercept.

2 What are the slopes of these linear functions?

$$y = 4x - 3 \quad \underline{4}$$

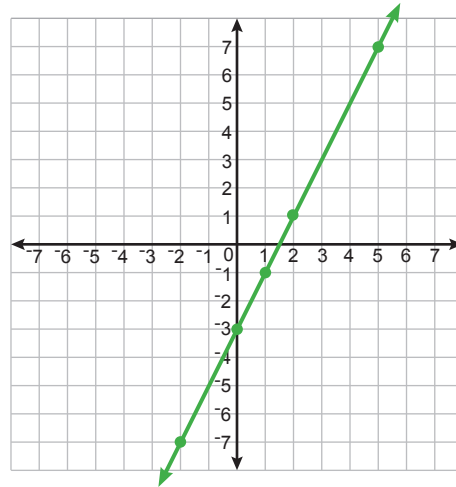
$$y = -\frac{1}{3}x \quad \underline{-\frac{1}{3}}$$

3 Complete the table for this linear function.

$$y = 2x - 3$$

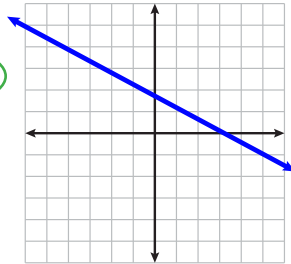
Input x	Output y
5	7
2	1
1	-1
0	-3
-2	-7

4 Graph the function from problem 3



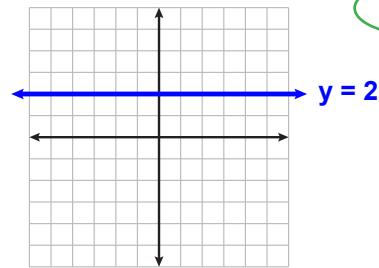
5 Does this line have a positive or a negative slope?

Negative



6 What is the slope of this line?

Zero



7 Find the slope and y-intercept of this linear function.

(Hint: rearrange into $y = mx + b$ form.)

$$2(x - 3) = y + 1$$

$$2x - 6 = y + 1$$

$$-1 \quad -1$$

$$2x - 7 = y$$

or $y = 2x - 7$

Slope = 2
y-intercept = -7

8 Find the slope and y-intercept of this linear function.

(Hint: rearrange into $y = mx + b$ form.)

$$2x + x = 4(y - 1)$$

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

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

$$+1 \quad +1$$

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

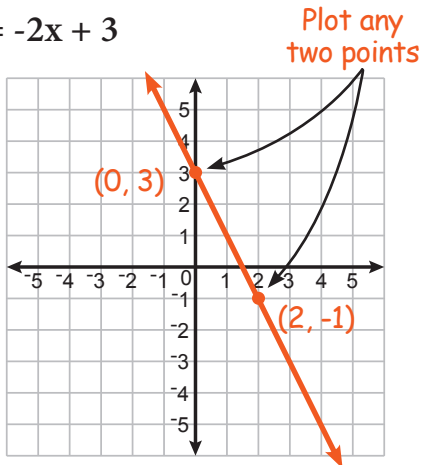
Slope = $\frac{3}{4}$
y-intercept = 1

Graphing Linear Functions

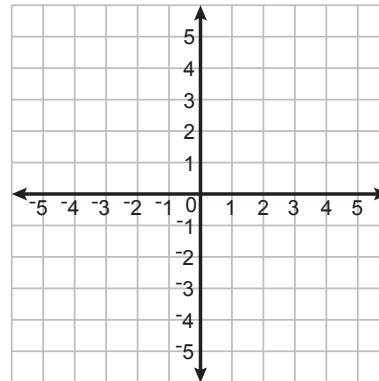
AB-BLF 1

Instructions: Graph each linear function on the coordinate plane. (Hint: you only need to plot two points to graph the line. Then you can use a ruler to draw a straight line through those two points.)

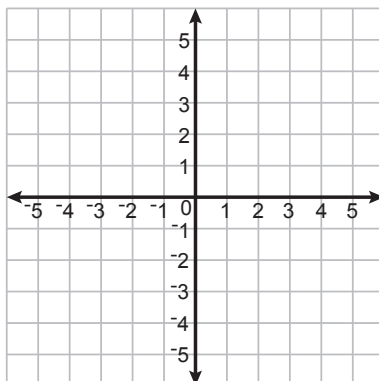
1 $y = -2x + 3$



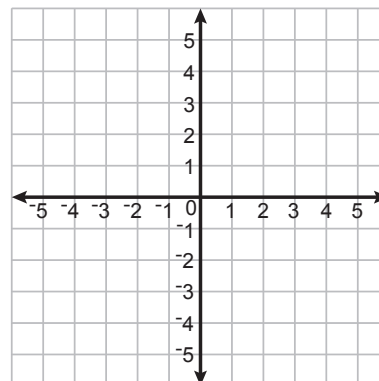
2 $y = 1x + 2$



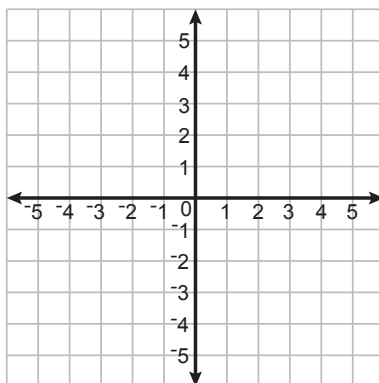
3 $y = -1x + 2$



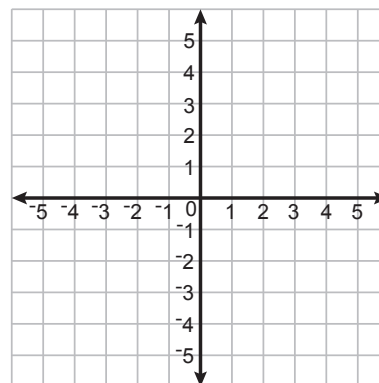
4 $y = -x - 2$



5 $y = 4x - 4$



6 $y = \frac{x}{2} + 3$

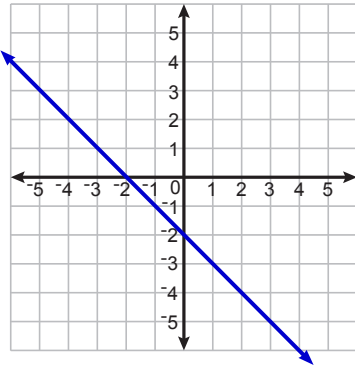


Slope & y-intercept (Graphs)

AB-BLF 2

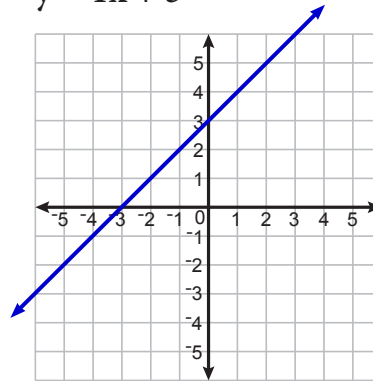
Instructions: Determine the slope and y-intercept of each linear function below.

1 $y = -x - 2$



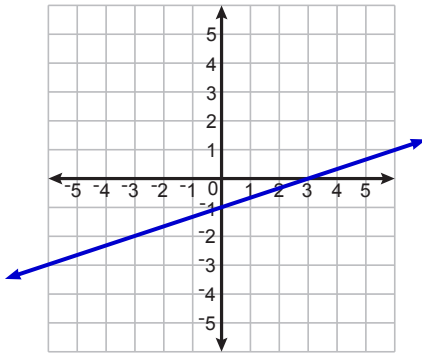
Slope: -1 y-intercept: -2

2 $y = 1x + 3$



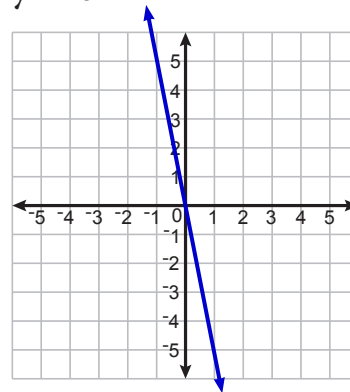
Slope: _____ y-intercept: _____

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



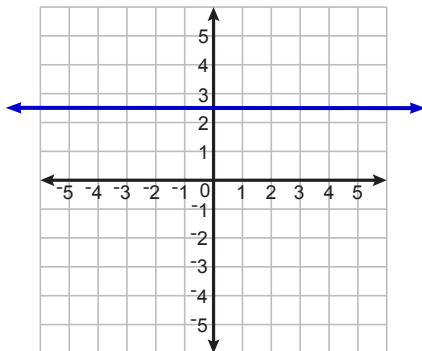
Slope: _____ y-intercept: _____

4 $y = -5x$



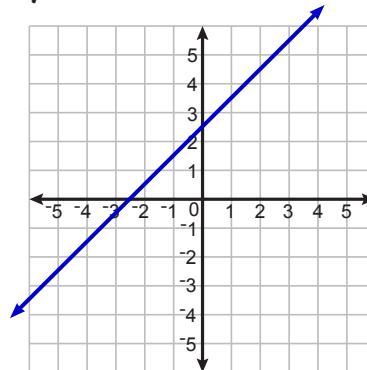
Slope: _____ y-intercept: _____

5 $y = 2.5$



Slope: _____ y-intercept: _____

6 $y = x + 2.5$



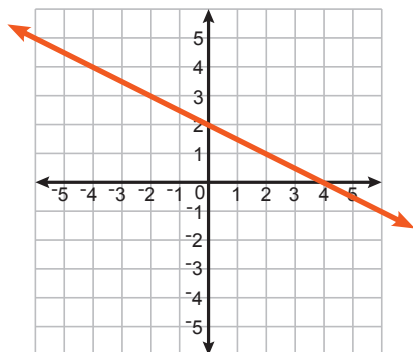
Slope: _____ y-intercept: _____

Graphing Linear Functions - Set 2

AB-BLF 3

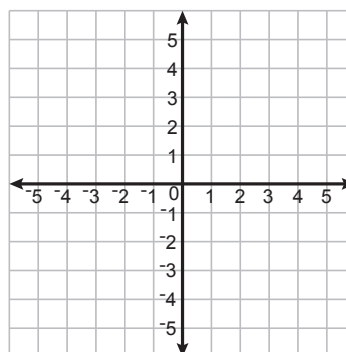
Instructions: Graph each linear functions AND determine its slope and y-intercept.

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



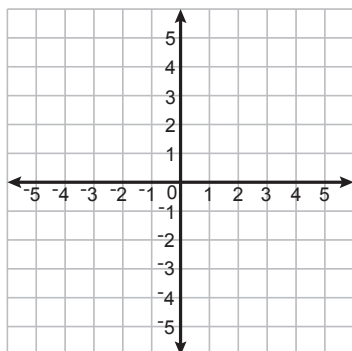
Slope: $-\frac{1}{2}$ y-intercept: 2

2 $y = 3x + 1$



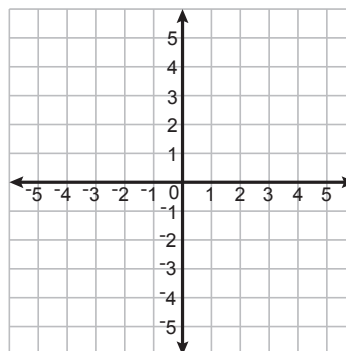
Slope: _____ y-intercept: _____

3 $y = \frac{x}{4}$



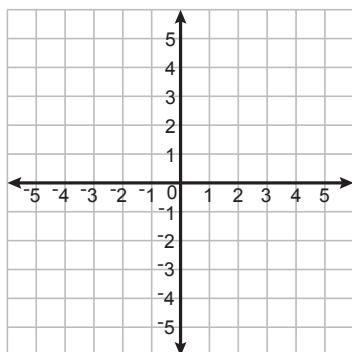
Slope: _____ y-intercept: _____

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



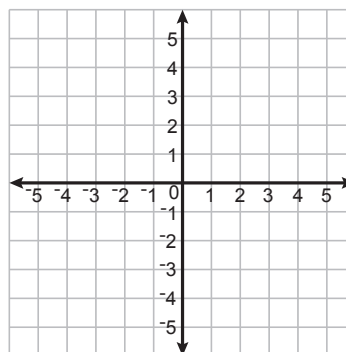
Slope: _____ y-intercept: _____

5 $y = 0.5x - 2$



Slope: _____ y-intercept: _____

6 $y = -6x + 6$



Slope: _____ y-intercept: _____

Slope-Intercept Form

AB-BLF 4

Instructions: Determine the slope and y-intercept of each linear function below. If the equation is not in "Slope-Intercept Form", then rearrange it so it is.

1 $y = 4x + 7$

Slope:

4

y-intercept:

7

2 $y + 2 = 5x$
 $-2 \quad -2$

Slope:

5

y-intercept:

-2

$y = 5x - 2$

3 $y - 1 = -2x$

Slope:

y-intercept:

4 $y = -x$

Slope:

y-intercept:

5 $y = 7 - 3x$

Slope:

y-intercept:

6 $\frac{y}{2} = x$

Slope:

y-intercept:

7 $5 + y = 1 + 2x$

Slope:

y-intercept:

8 $\frac{y}{3} = \frac{x}{6}$

Slope:

y-intercept:

9 $\frac{y}{2} = x + 1$

Slope:

y-intercept:

10 $y + x = 3 + x$

Slope:

y-intercept:

Converting to Slope-Intercept Form

AB-BLF 5

Instructions: Convert each linear function into "Slope-Intercept Form" ($y = mx + b$).

$$\begin{array}{r} \mathbf{1} \quad 4x + 2y = 8 \\ -4x \quad -4x \end{array}$$

$$\frac{2y}{2} = \frac{-4x + 8}{2}$$

$$y = -2x + 4$$

$$\begin{array}{r} \mathbf{2} \quad \frac{y}{2} - x = 4x - 6 \\ +x \quad +x \end{array}$$

$$(2) \frac{y}{2} = (5x - 6)(2)$$

$$y = 10x - 12$$

$$\mathbf{3} \quad 3y = 3 - 6x$$

$$\mathbf{4} \quad -2y = 6 - 1x$$

$$\mathbf{5} \quad \frac{y}{2} - 4 = \frac{x}{3}$$

$$\mathbf{6} \quad y + 3 = \frac{x}{5} - 2y$$

$$\mathbf{7} \quad 2(y - 3) = x + 10$$

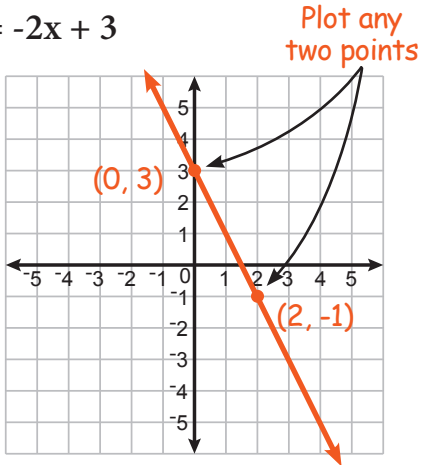
$$\mathbf{8} \quad (y - 3) = 4(x - 1)$$

Graphing Linear Functions

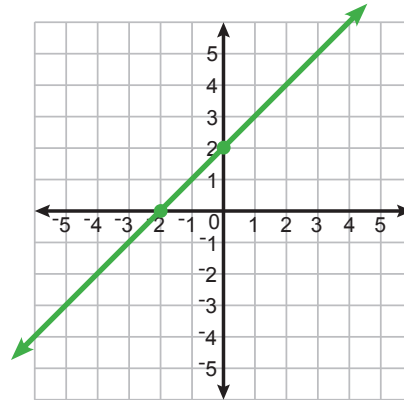
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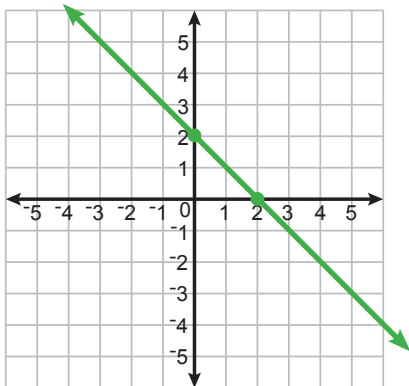
1 $y = -2x + 3$



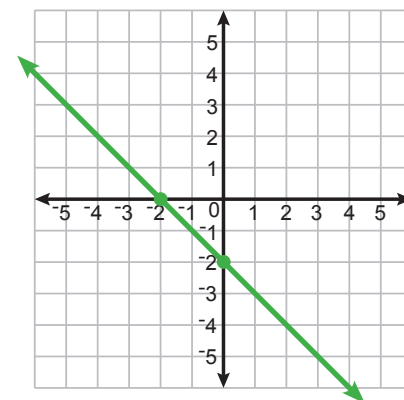
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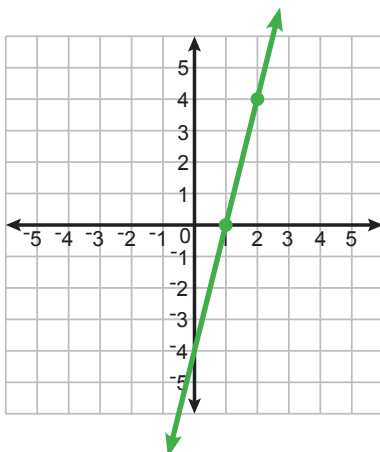
3 $y = -1x + 2$



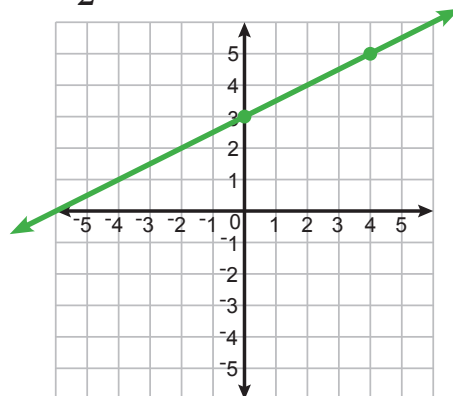
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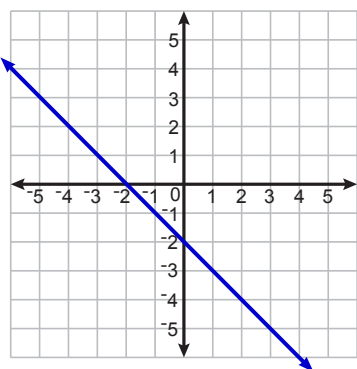


Slope & y-intercept (Graphs)

AB-BLF 2

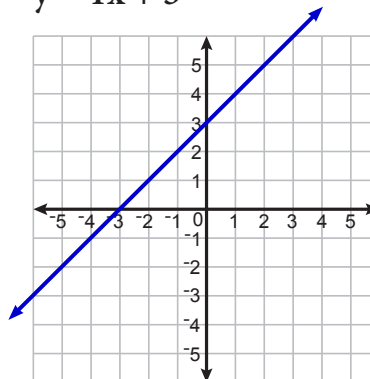
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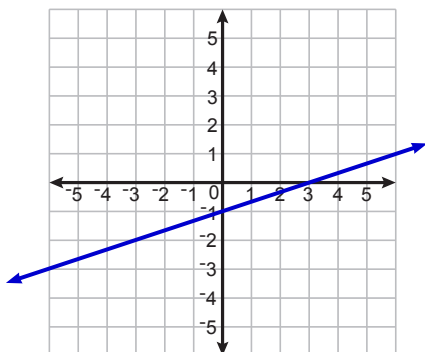
Slope: -1 y-intercept: -2

2 $y = 1x + 3$



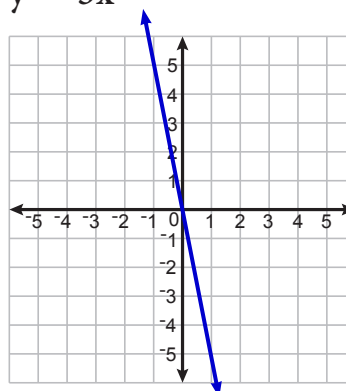
Slope: 1 y-intercept: 3

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



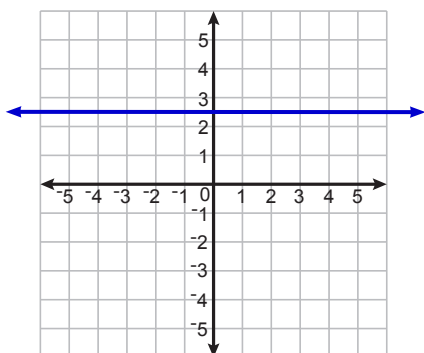
Slope: $\frac{1}{3}$ y-intercept: -1

4 $y = -5x$



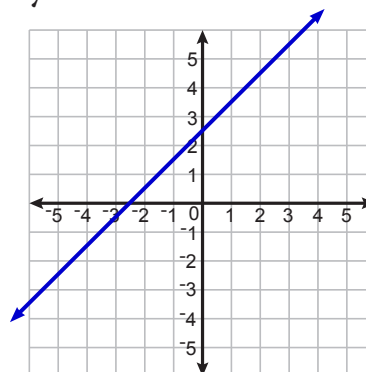
Slope: -5 y-intercept: 0

5 $y = 2.5$



Slope: 0 y-intercept: 2.5

6 $y = x + 2.5$



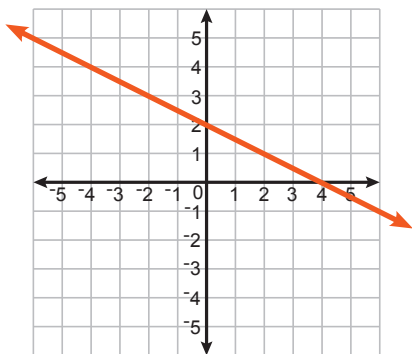
Slope: 1 y-intercept: 2.5

Graphing Linear Functions - Set 2

AB-BLF 3

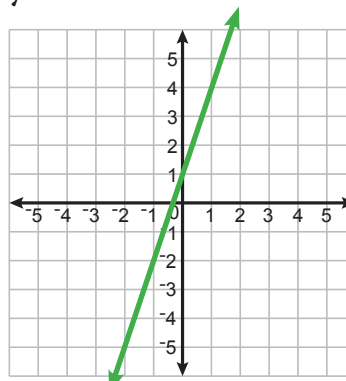
Instructions: Graph each linear functions AND determine its slope and y-intercept.

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



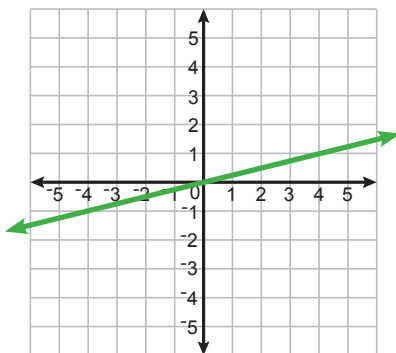
Slope: $-\frac{1}{2}$ y-intercept: 2

2 $y = 3x + 1$



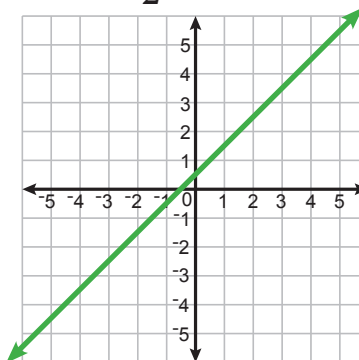
Slope: 3 y-intercept: 1

3 $y = \frac{x}{4}$



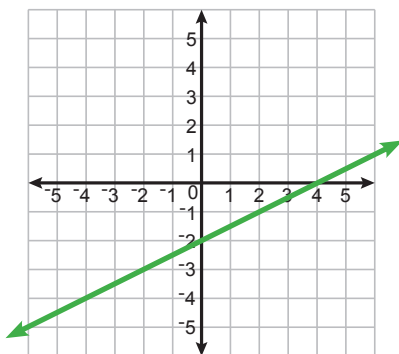
Slope: $\frac{1}{4}$ y-intercept: 0

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



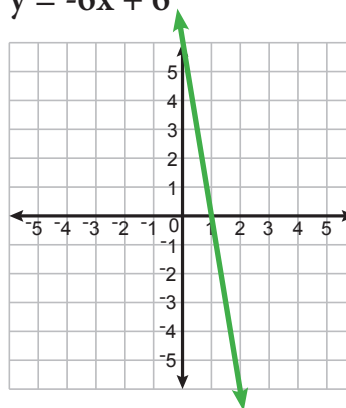
Slope: 1 y-intercept: $\frac{1}{2}$

5 $y = 0.5x - 2$



Slope: 0.5 y-intercept: -2

6 $y = -6x + 6$



Slope: -6 y-intercept: 6

Slope-Intercept Form

AB-BLF 4

Instructions: Determine the slope and y-intercept of each linear function below. If the equation is not in "Slope-Intercept Form", then rearrange it so it is.

1 $y = 4x + 7$

Slope:

4

y-intercept:

7

2 $y + 2 = 5x$
-2 -2

Slope:

5

y-intercept:

-2

$y = 5x - 2$

3 $y - 1 = -2x$
+1 +1

Slope:

-2

y-intercept:

1

$y = -2x + 1$

4 $y = -x$

Slope:

-1

y-intercept:

0

$y = -1x + 0$

5 $y = 7 - 3x$

Slope:

-3

y-intercept:

7

$y = -3x + 7$

6 $(2)\frac{y}{2} = x(2)$

Slope:

2

y-intercept:

0

$y = 2x + 0$

7 $5 + y = 1 + 2x$
-5 -5

Slope:

2

y-intercept:

-4

$y = 2x - 4$

8 $(3)\frac{y}{3} = \frac{x}{6}(3)$

Slope:

1/2

y-intercept:

0

$y = \frac{1}{2}x + 0$

9 $(2)\frac{y}{2} = (x + 1)(2)$

Slope:

2

y-intercept:

2

$y = 2x + 2$

10 $y + x = 3 + x$
-x -x

Slope:

0

y-intercept:

3

$y = (0x) + 3$

Basic Linear Functions

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In the equation $y = mx + b$,
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and 'b' is the y-intercept.

2 What are the slopes of these linear functions?

$$y = 4x - 3 \quad \underline{4}$$

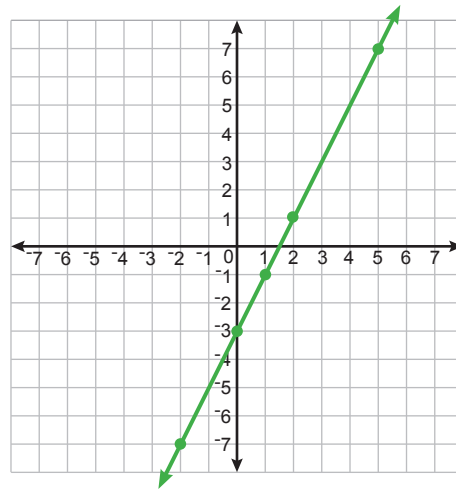
$$y = -\frac{1}{3}x \quad \underline{-\frac{1}{3}}$$

3 Complete the table for this linear function.

$$y = 2x - 3$$

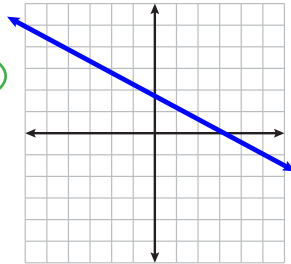
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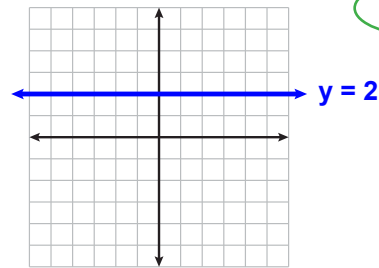
5 Does this line have a positive or a negative slope?

Negative



6 What is the slope of this line?

Zero



7 Find the slope and y-intercept of this linear function.

(Hint: rearrange into $y = mx + b$ form.)

$$2(x - 3) = y + 1$$

$$2x - 6 = y + 1$$

$$-1 \quad -1$$

$$2x - 7 = y$$

or $y = 2x - 7$

Slope = 2
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(Hint: rearrange into $y = mx + b$ form.)

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

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$$+1 \quad +1$$

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

Slope = $\frac{3}{4}$
y-intercept = 1

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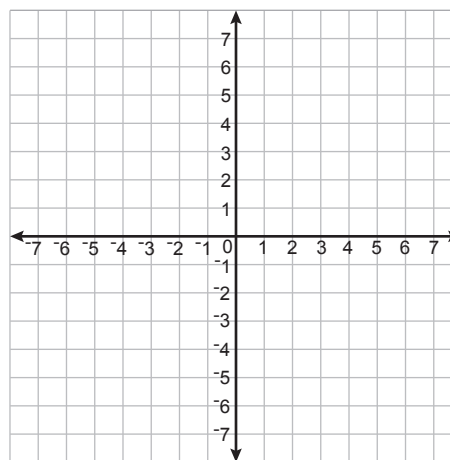
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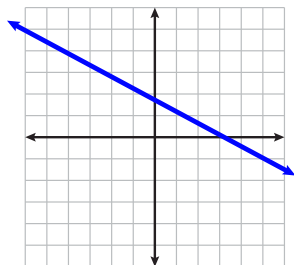
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5	
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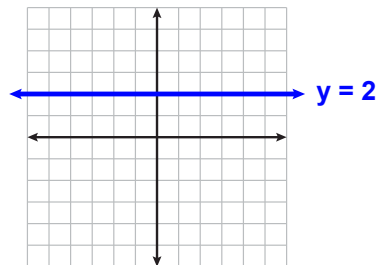
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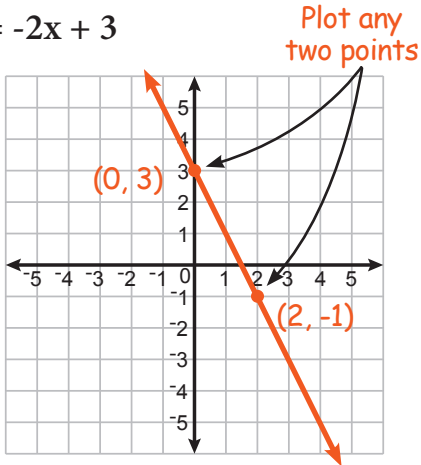
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Graphing Linear Functions

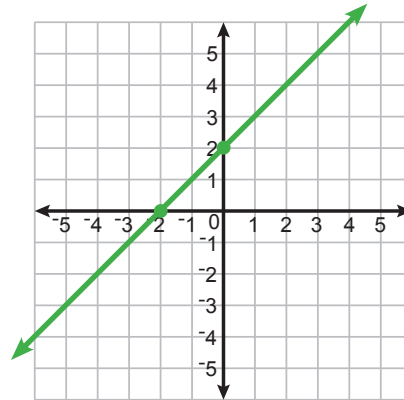
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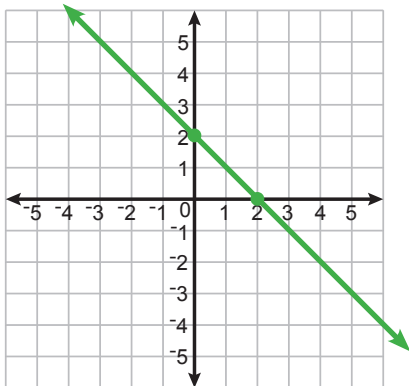
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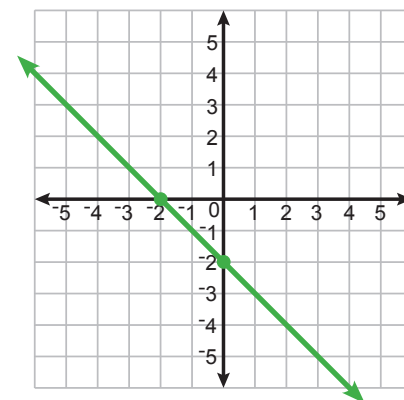
2 $y = 1x + 2$



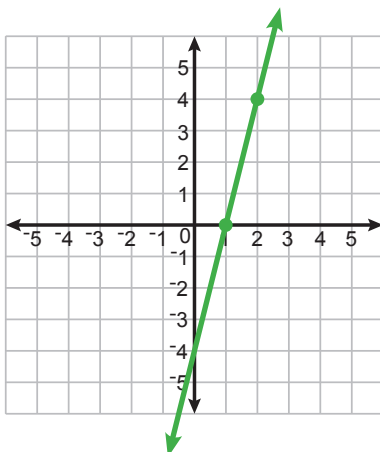
3 $y = -1x + 2$



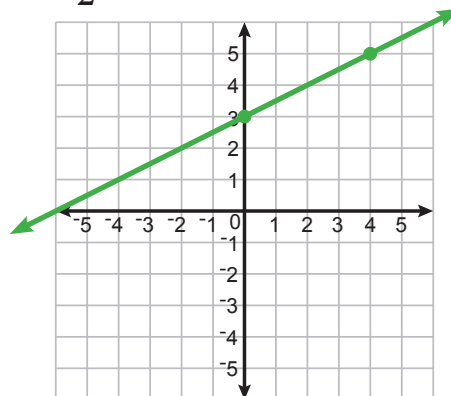
4 $y = -x - 2$



5 $y = 4x - 4$



6 $y = \frac{x}{2} + 3$

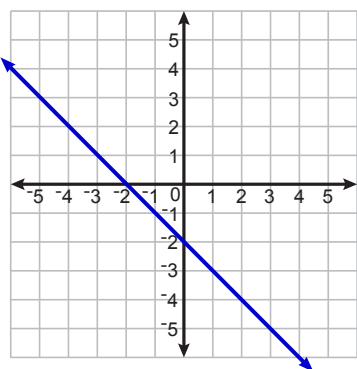


Slope & y-intercept (Graphs)

AB-BLF 2

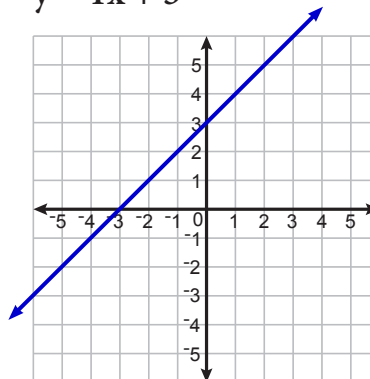
Instructions: Determine the slope and y-intercept of each linear function below.

1 $y = -x - 2$



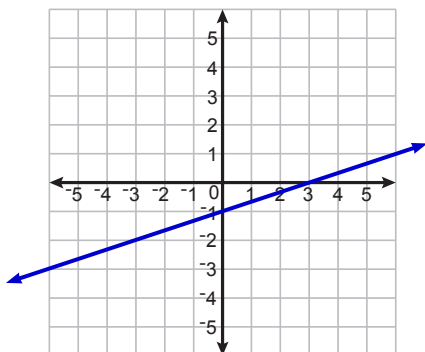
Slope: -1 y-intercept: -2

2 $y = 1x + 3$



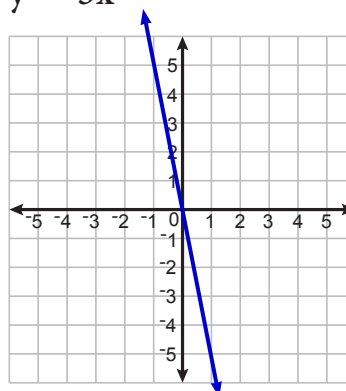
Slope: 1 y-intercept: 3

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



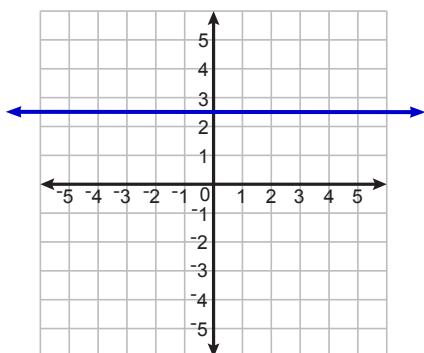
Slope: $\frac{1}{3}$ y-intercept: -1

4 $y = -5x$



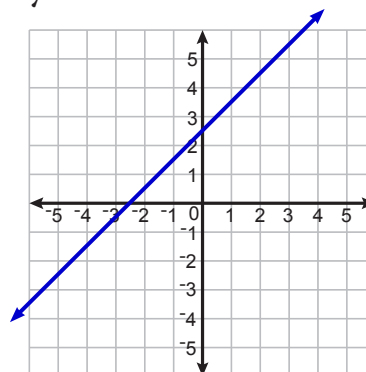
Slope: -5 y-intercept: 0

5 $y = 2.5$



Slope: 0 y-intercept: 2.5

6 $y = x + 2.5$



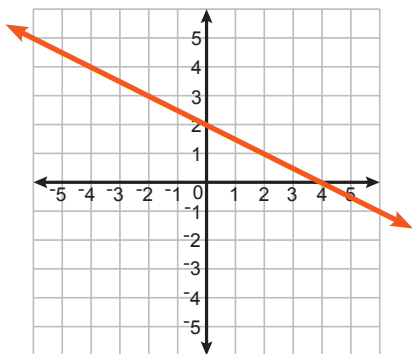
Slope: 1 y-intercept: 2.5

Graphing Linear Functions - Set 2

AB-BLF 3

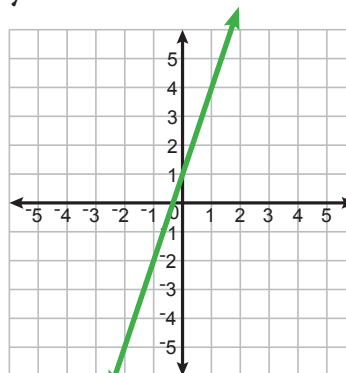
Instructions: Graph each linear functions AND determine its slope and y-intercept.

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



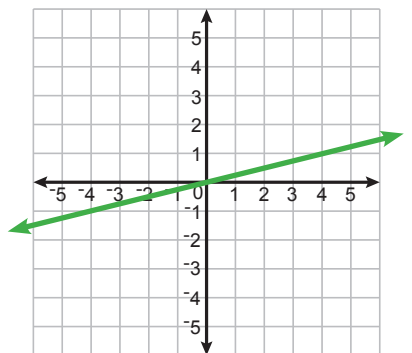
Slope: $-\frac{1}{2}$ y-intercept: 2

2 $y = 3x + 1$



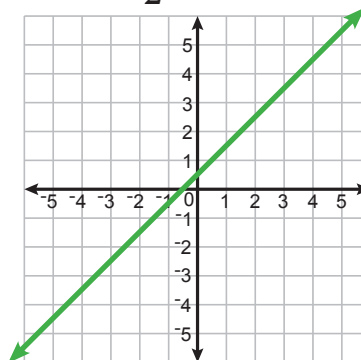
Slope: 3 y-intercept: 1

3 $y = \frac{x}{4}$



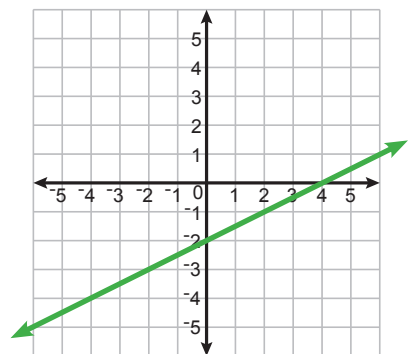
Slope: $\frac{1}{4}$ y-intercept: 0

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



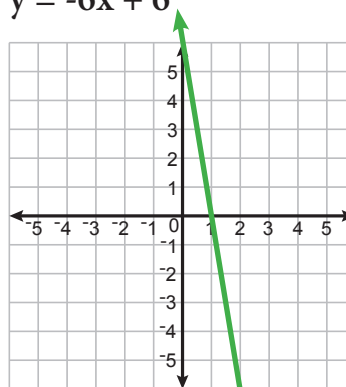
Slope: 1 y-intercept: $\frac{1}{2}$

5 $y = 0.5x - 2$



Slope: 0.5 y-intercept: -2

6 $y = -6x + 6$



Slope: -6 y-intercept: 6

Slope-Intercept Form

AB-BLF 4

Instructions: Determine the slope and y-intercept of each linear function below. If the equation is not in "Slope-Intercept Form", then rearrange it so it is.

1 $y = 4x + 7$

Slope:

4

y-intercept:

7

2 $y + 2 = 5x$
-2 -2

Slope:

5

y-intercept:

-2

$y = 5x - 2$

3 $y - 1 = -2x$
+1 +1

Slope:

-2

y-intercept:

1

$y = -2x + 1$

4 $y = -x$

Slope:

-1

y-intercept:

0

$y = -1x + 0$

5 $y = 7 - 3x$

Slope:

-3

y-intercept:

7

$y = -3x + 7$

6 $(2)\frac{y}{2} = x(2)$

Slope:

2

y-intercept:

0

$y = 2x + 0$

7 $5 + y = 1 + 2x$
-5 -5

Slope:

2

y-intercept:

-4

$y = 2x - 4$

8 $(3)\frac{y}{3} = \frac{x}{6}(3)$

Slope:

1/2

y-intercept:

0

$y = \frac{1}{2}x + 0$

9 $(2)\frac{y}{2} = (x + 1)(2)$

Slope:

2

y-intercept:

2

$y = 2x + 2$

10 $y + x = 3 + x$
-x -x

Slope:

0

y-intercept:

3

$y = (0x) + 3$

Converting to Slope-Intercept Form

AB-BLF 5

Instructions: Convert each linear function into "Slope-Intercept Form" ($y = mx + b$).

$$\begin{array}{r} \mathbf{1} \quad 4x + 2y = 8 \\ -4x \quad -4x \end{array}$$

$$\frac{2y}{2} = \frac{-4x + 8}{2}$$

$$y = -2x + 4$$

$$\begin{array}{r} \mathbf{2} \quad \frac{y}{2} - x = 4x - 6 \\ \quad \quad +x \quad +x \end{array}$$

$$(2) \frac{y}{2} = (5x - 6)(2)$$

$$y = 10x - 12$$

$$\begin{array}{r} \mathbf{3} \quad \frac{3y}{3} = \frac{3}{3} - \frac{6x}{3} \end{array}$$

$$y = 1 - 2x$$

$$y = -2x + 1$$

$$\begin{array}{r} \mathbf{4} \quad \frac{-2y}{-2} = \frac{6}{-2} - \frac{1x}{-2} \end{array}$$

$$y = -3 + \frac{1}{2}x$$

$$y = \frac{1}{2}x - 3$$

$$\begin{array}{r} \mathbf{5} \quad \frac{y}{2} - 4 = \frac{x}{3} \\ \quad \quad +4 \quad \quad +4 \end{array}$$

$$(2) \frac{y}{2} = \left(\frac{x}{3} + 4\right)(2)$$

$$y = \frac{2}{3}x + 8$$

$$\begin{array}{r} \mathbf{6} \quad y + 3 = \frac{x}{5} - 2y \\ \quad \quad +2y \quad \quad +2y \end{array}$$

$$\frac{1}{3}(3y + 3) = \left(\frac{1}{5}x\right) \frac{1}{3}$$

$$y + 1 = \frac{1}{15}x$$

$$y = \frac{1}{15}x - 1$$

$$\begin{array}{r} \mathbf{7} \quad \frac{2(y - 3)}{2} = \frac{x}{2} + \frac{10}{2} \end{array}$$

$$y - 3 = \frac{1}{2}x + 5$$

$$+3 \quad \quad +3$$

$$y = \frac{1}{2}x + 8$$

$$\mathbf{8} \quad (y - 3) = 4(x - 1)$$

$$y - 3 = 4x - 4$$

$$+3 \quad \quad +3$$

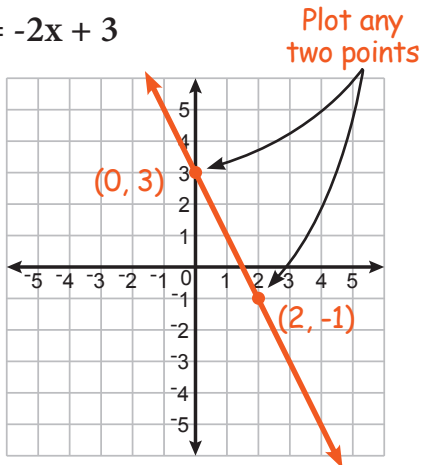
$$y = 4x - 1$$

Graphing Linear Functions

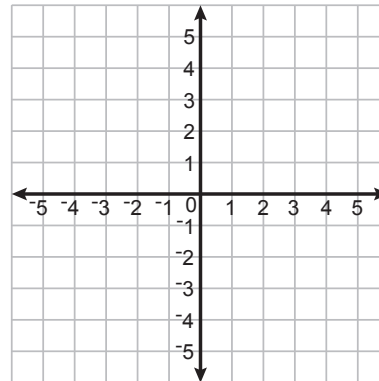
AB-BLF 1

Instructions: Graph each linear function on the coordinate plane. (Hint: you only need to plot two points to graph the line. Then you can use a ruler to draw a straight line through those two points.)

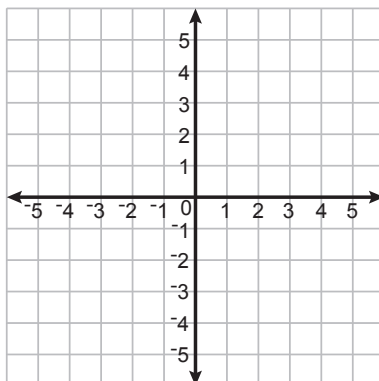
1 $y = -2x + 3$



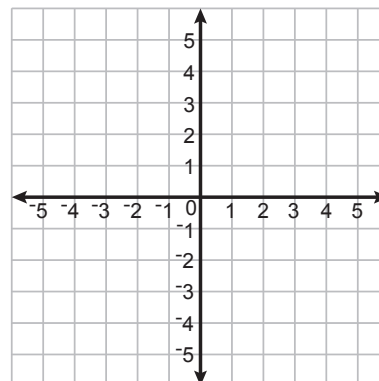
2 $y = 1x + 2$



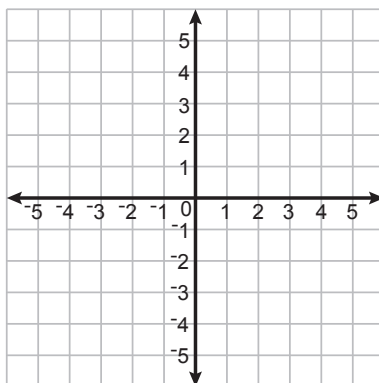
3 $y = -1x + 2$



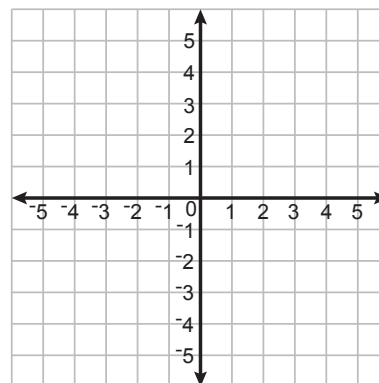
4 $y = -x - 2$



5 $y = 4x - 4$



6 $y = \frac{x}{2} + 3$

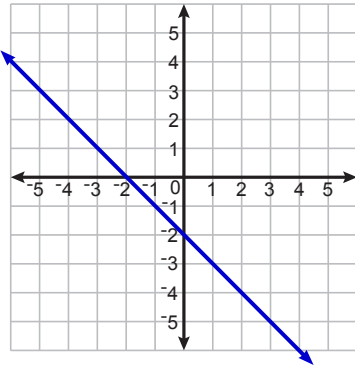


Slope & y-intercept (Graphs)

AB-BLF 2

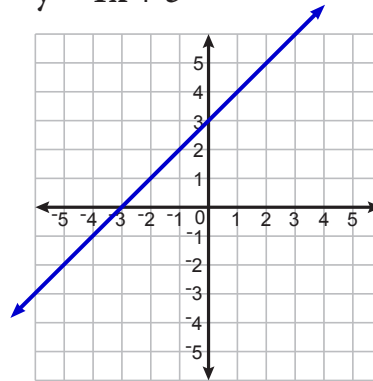
Instructions: Determine the slope and y-intercept of each linear function below.

1 $y = -x - 2$



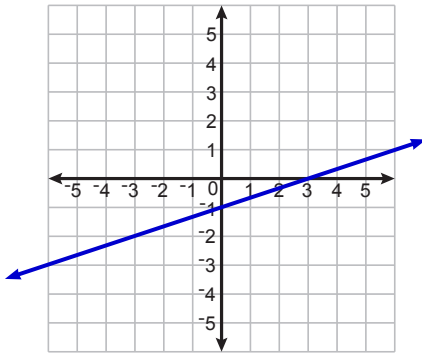
Slope: -1 y-intercept: -2

2 $y = 1x + 3$



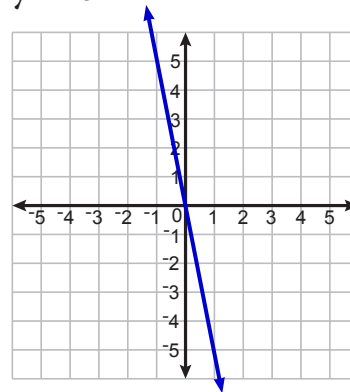
Slope: _____ y-intercept: _____

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



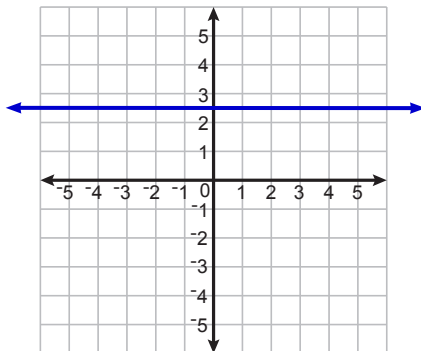
Slope: _____ y-intercept: _____

4 $y = -5x$



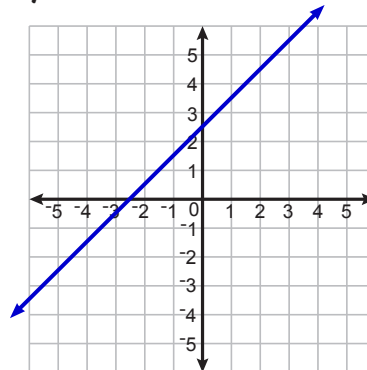
Slope: _____ y-intercept: _____

5 $y = 2.5$



Slope: _____ y-intercept: _____

6 $y = x + 2.5$



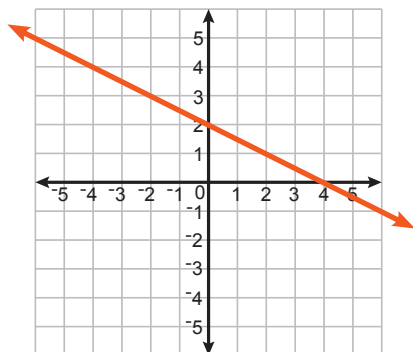
Slope: _____ y-intercept: _____

Graphing Linear Functions - Set 2

AB-BLF 3

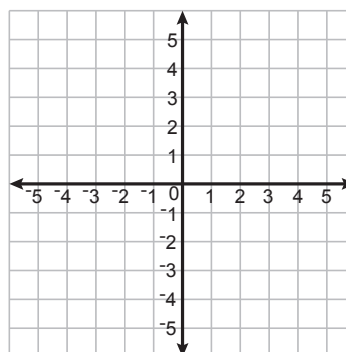
Instructions: Graph each linear functions AND determine its slope and y-intercept.

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



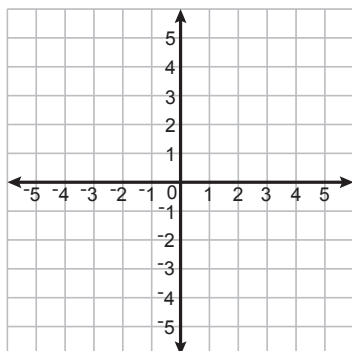
Slope: $-\frac{1}{2}$ y-intercept: 2

2 $y = 3x + 1$



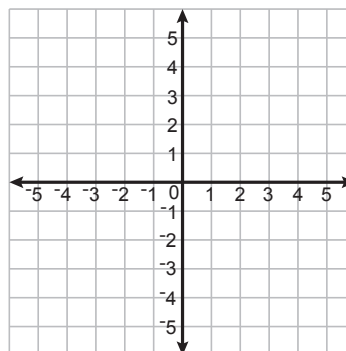
Slope: _____ y-intercept: _____

3 $y = \frac{x}{4}$



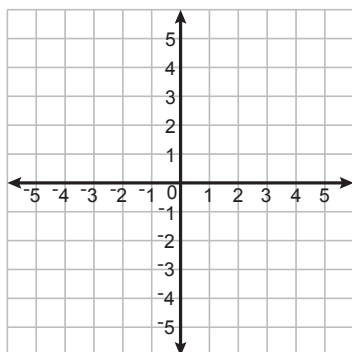
Slope: _____ y-intercept: _____

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



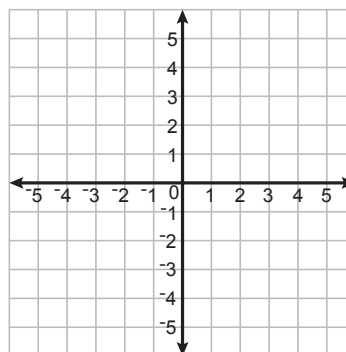
Slope: _____ y-intercept: _____

5 $y = 0.5x - 2$



Slope: _____ y-intercept: _____

6 $y = -6x + 6$



Slope: _____ y-intercept: _____

Slope-Intercept Form

AB-BLF 4

Instructions: Determine the slope and y-intercept of each linear function below. If the equation is not in "Slope-Intercept Form", then rearrange it so it is.

1 $y = 4x + 7$

Slope:

4

y-intercept:

7

2 $y + 2 = 5x$
-2 -2

Slope:

5

y-intercept:

-2

$y = 5x - 2$

3 $y - 1 = -2x$

Slope:

y-intercept:

4 $y = -x$

Slope:

y-intercept:

5 $y = 7 - 3x$

Slope:

y-intercept:

6 $\frac{y}{2} = x$

Slope:

y-intercept:

7 $5 + y = 1 + 2x$

Slope:

y-intercept:

8 $\frac{y}{3} = \frac{x}{6}$

Slope:

y-intercept:

9 $\frac{y}{2} = x + 1$

Slope:

y-intercept:

10 $y + x = 3 + x$

Slope:

y-intercept:

Converting to Slope-Intercept Form

AB-BLF 5

Instructions: Convert each linear function into "Slope-Intercept Form" ($y = mx + b$).

$$\begin{array}{r} \mathbf{1} \quad 4x + 2y = 8 \\ -4x \quad -4x \end{array}$$

$$\frac{2y}{2} = \frac{-4x + 8}{2}$$

$$y = -2x + 4$$

$$\begin{array}{r} \mathbf{2} \quad \frac{y}{2} - x = 4x - 6 \\ +x \quad +x \end{array}$$

$$(2) \frac{y}{2} = (5x - 6)(2)$$

$$y = 10x - 12$$

$$\mathbf{3} \quad 3y = 3 - 6x$$

$$\mathbf{4} \quad -2y = 6 - 1x$$

$$\mathbf{5} \quad \frac{y}{2} - 4 = \frac{x}{3}$$

$$\mathbf{6} \quad y + 3 = \frac{x}{5} - 2y$$

$$\mathbf{7} \quad 2(y - 3) = x + 10$$

$$\mathbf{8} \quad (y - 3) = 4(x - 1)$$