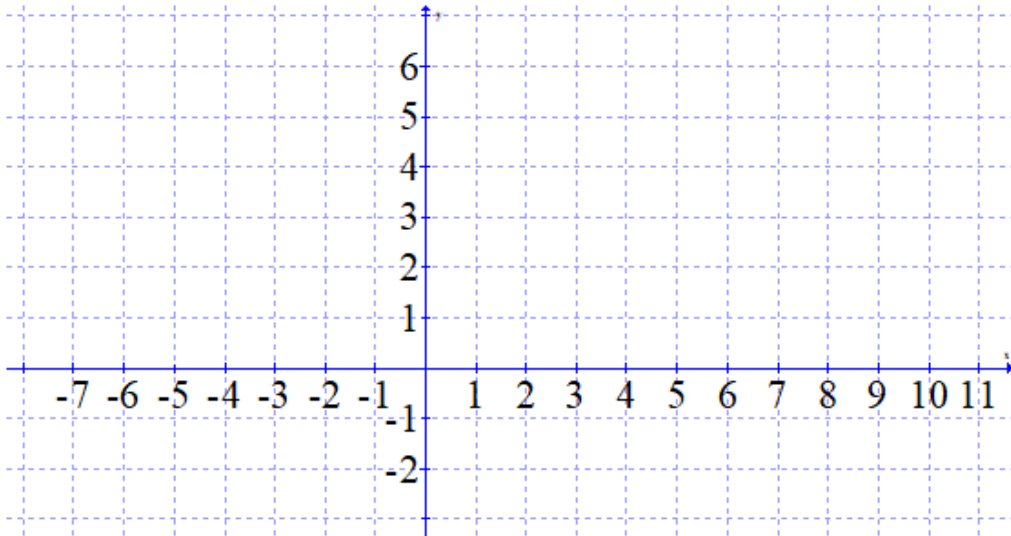
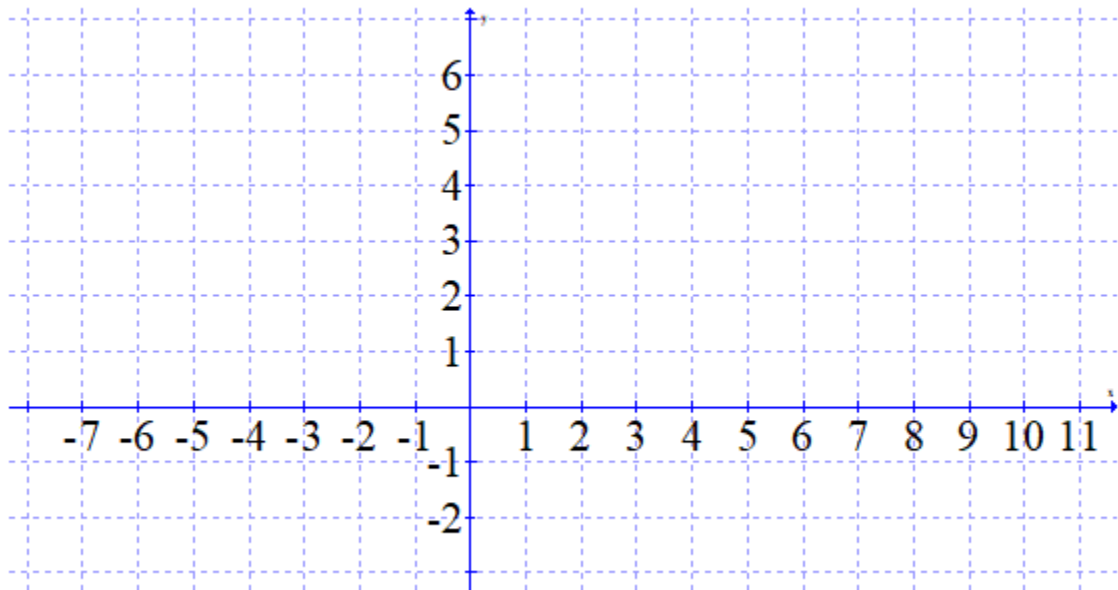


Equation of a Line Practice

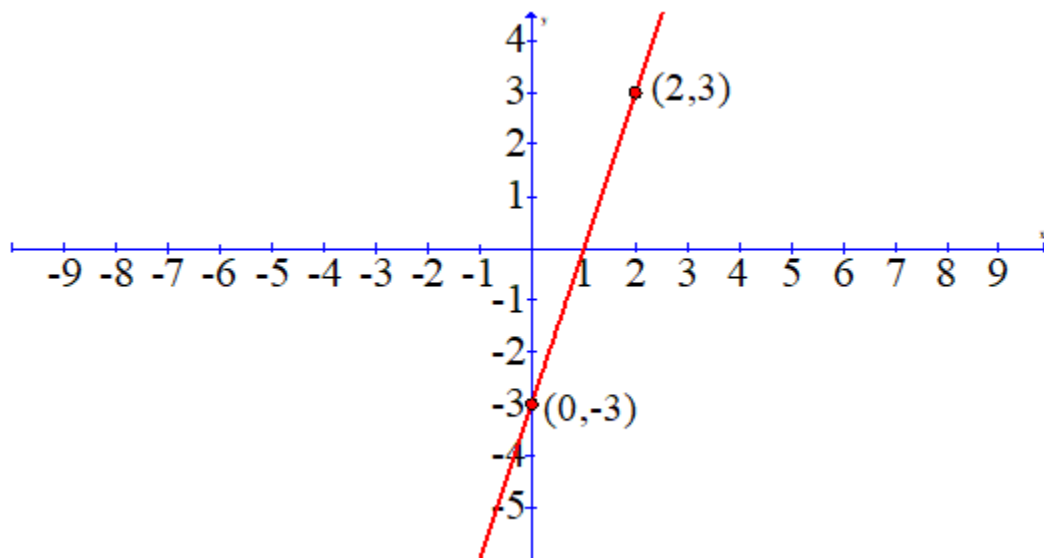
1. On the grid below, sketch the equation, $y = 2x + 1$



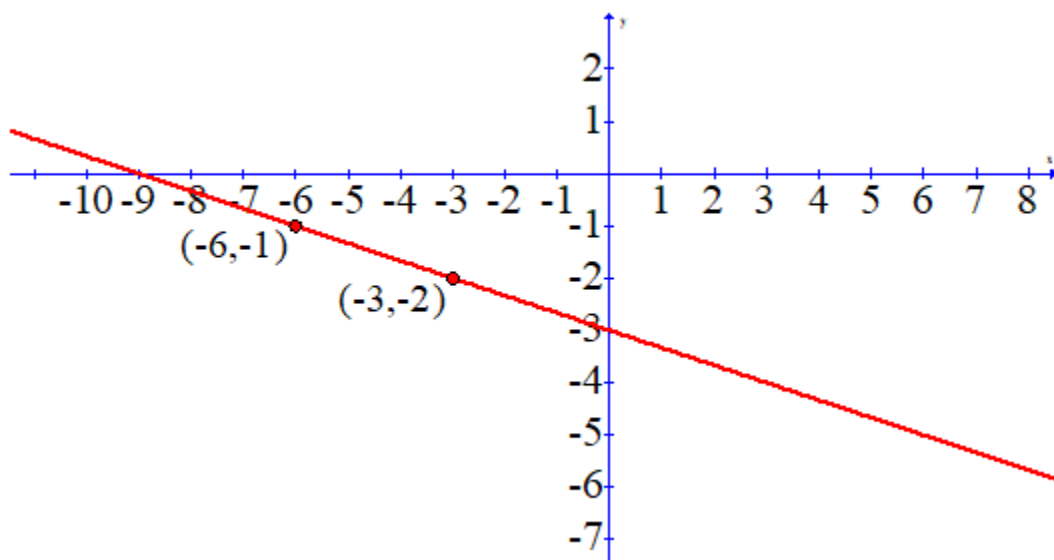
2. On the grid below, sketch the equation, $y = \left(\frac{-3}{2}\right)x - 2$



3. State the equation of the line below in the form $y = mx + b$



4. State the equation of the line below in the form $y = mx + b$.



5. For each of the following equations, state the slope and the y-intercept. If y is not isolated, remember to do that first.

a) $y = 10x + 9$

b) $y = \left(\frac{-3}{4}\right)x - 6$

c) $0 = 7x - y + 2$

d) $12x - y = 8$

e) $2x + 3y = 6$

f) $y = -19x + 1$

6. Which of the following points lie on the line defined by $y = 3x + 1$

a) (0, 2)

b) (5, 16)

c) (3, 9)

7. The point (2, y) lies on the line defined by $y = 5x - 8$. What is the value of y?

8. The point (x, -1) lies on the line defined by $y = 4x + 3$. What is the value of x?

9. A line rises to the left and crosses the y-axis at -7. Which of the following is a possible equation for this line?

a) $y = x - 7$

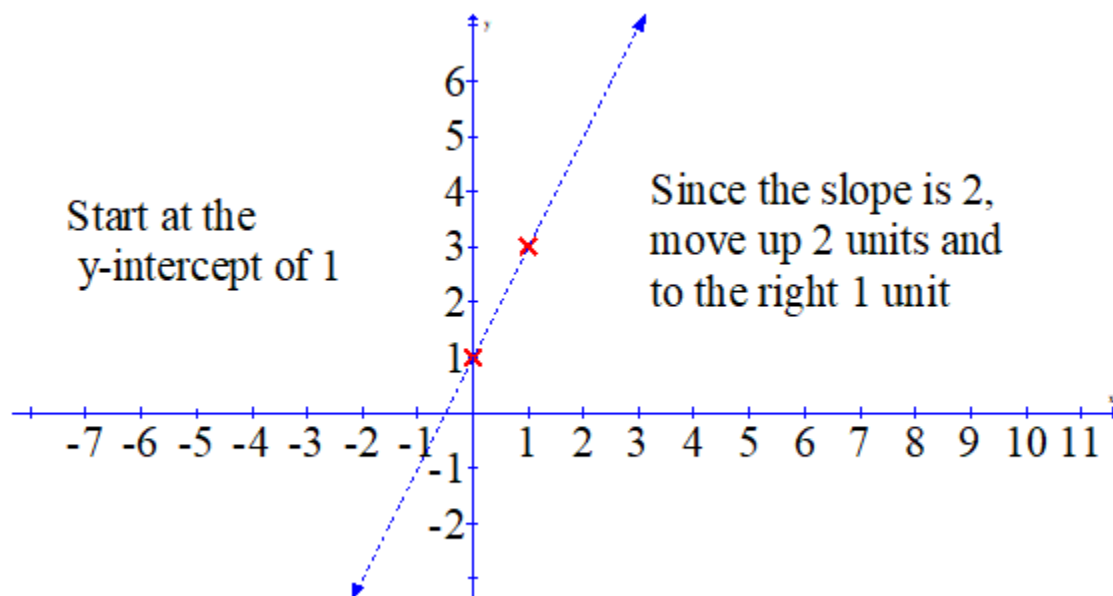
b) $y = -6x - 7$

c) $y = -5x + 7$

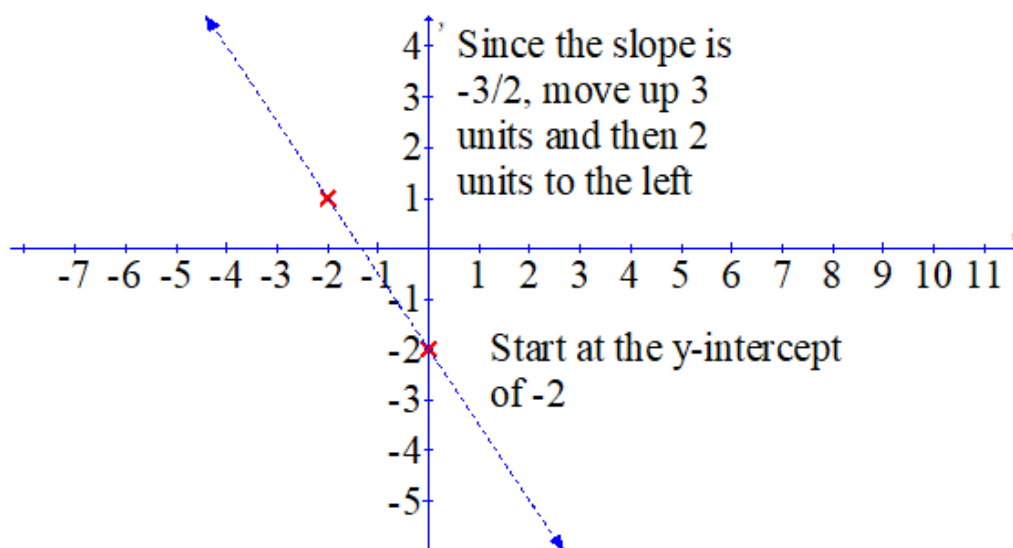
d) $y = 3x + 7$

Equation of a Line Practice (Solutions)

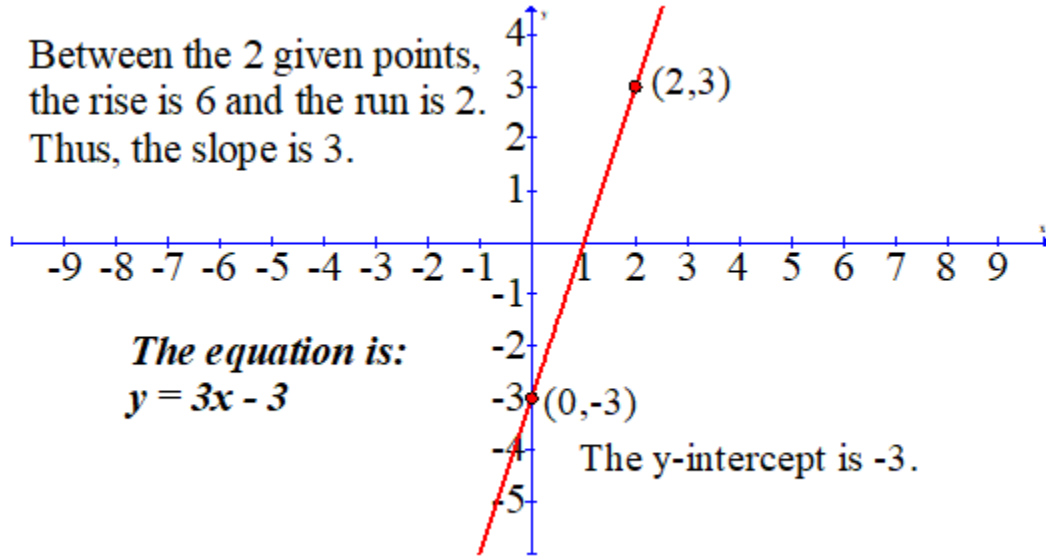
1. On the grid below, sketch the equation, $y = 2x + 1$



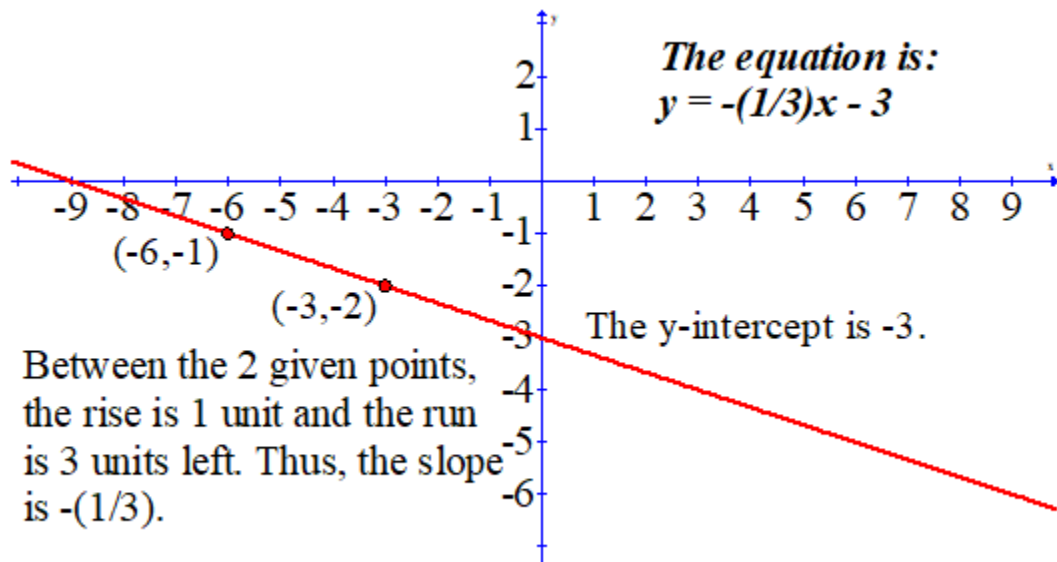
2. On the grid below, sketch the equation, $y = \left(\frac{-3}{2}\right)x - 2$



3. State the equation of the line below in the form $y = mx + b$



4. State the equation of the line below in the form $y = mx + b$.



5. For each of the following equations, state the slope and the y-intercept.

a) $y = 10x + 9$

Answer: The slope is 10 and the y-intercept is 9.

b) $y = \left(\frac{-3}{4}\right)x - 6$

Answer: The slope is $\left(\frac{-3}{4}\right)$

The y-intercept is -6.

c) $0 = 7x - y + 2$

Answer: First isolate y , by adding y to both sides.

$$y = 7x + 2$$

The slope is 7 and the y-intercept is 2.

d) $12x - y = 8$

Answer: First isolate y , by adding y to both sides, and subtracting 8 from both sides.

$$12x - 8 = y$$

The slope is 12 and the y-intercept is -8.

e) $2x + 3y = 6$

Answer: First isolate y , by subtracting $2x$ from both sides, and then dividing each term by 3.

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

The slope is $\left(-\frac{2}{3}\right)$ and the y-intercept is 2.

f) $y = -19x + 1$

Answer: The slope is -19 and the y-intercept is 1.

6. Which of the following points lie on the line defined by $y = 3x + 1$

a) (0, 2)

b) (5, 16)

c) (3, 9)

Answer: If a point is on a line, then substituting the x and y coordinates in the equation should result in a true statement.

a) Substitute the point (0,2).

$$2 = 3(0) + 1$$

$$2 = 0 + 1$$

$2 \neq 1$ [Since a true statement is not made, the point (0,2) is not on this line]

b) Substitute the point (5,16)

$$16 = 3(5) + 1$$

$16 = 16$ [Since a true statement is made, the point (5,16) is on this line]

c) Substitute the point (3,9)

$$9 = 3(3) + 1$$

$9 \neq 10$ [Since a true statement is not made, the point (3,9) is not on this line]

7. The point $(2, y)$ lies on the line defined by $y = 5x - 8$. What is the value of y ?

Answer: Substitute 2 for x , and solve the equation for y .

$$y = 5(2) - 8$$

$$y = 10 - 8$$

$$y = 2$$

8. The point $(x, -1)$ lies on the line defined by $y = 4x + 3$. What is the value of x ?

Answer: Substitute -1 for y , and solve the equation for x .

$$-1 = 4x + 3$$

Subtract 3 from both sides.

$$-4 = 4x$$

Divide each term by 4.

$$-1 = x$$

9. A line rises to the left and crosses the y -axis at -7 . Which of the following is a possible equation for this line?

a) $y = x - 7$

b) $y = -6x - 7$

c) $y = -5x + 7$

d) $y = 3x + 7$

Answer: A line rising to the left indicates a negative slope.

The y -intercept is -7 .

The correct answer is b.