

Graphing Linear Equations (1A6.0)

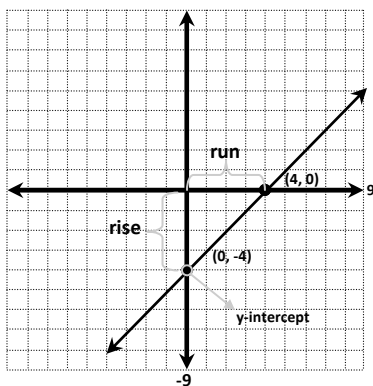
Name _____

Class _____ Date _____

Score _____

To find an equation of a line calculate the **slope** and find the **y-intercept**.
To find both the **x and y intercepts** given an equation, **solve for each**.

When given a line, the **slope** can be calculated by finding the lines **rise** and placing it over its **run**. Write the equation of the line by using the **slope** and **y-intercept**.



1 Find the **slope**:

$$\begin{array}{l} \text{Rise} = 4 \\ \text{Run} = 4 \end{array} \longrightarrow \frac{4}{4} \longrightarrow 1$$

2 Find the **y-intercept**

Because the line crosses the y-axis at (0, -4) the y-intercept is -4

3 Use the information from steps 1 and 2 to write the equation for the line:

$$y = mx + b \longrightarrow y = x - 4$$

To find the **x and y intercepts** when for an equation, **solve for each variable separately**.

What are the x and y intercepts for the following equation:

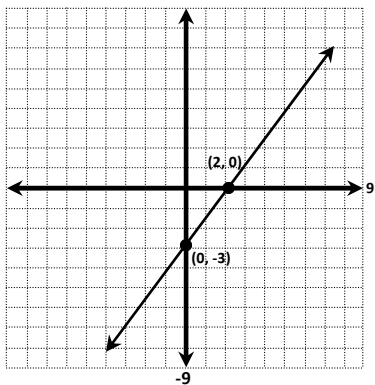
$$3x + 2y = 12$$

Solve for x

Solve for y

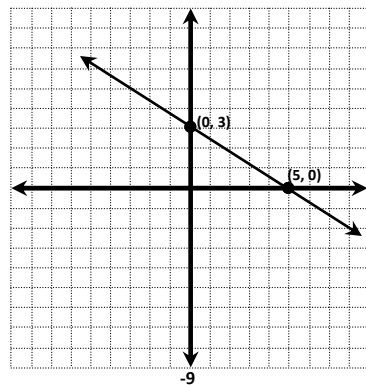
$$\begin{array}{l} 3x + 2(0) = 12 \text{ Substitute 0 for } y \\ 3x = 12 \text{ Divide by 3} \\ x = 4 \text{ x-intercept is 4} \end{array} \quad \begin{array}{l} 3(0) + 2y = 12 \text{ Substitute 0 for } x \\ 2y = 12 \text{ Divide by 2} \\ y = 6 \text{ x-intercept is 6} \end{array}$$

The x-intercept = 4
The y-intercept = 6



1) What is the equation of the line shown in the graph above?

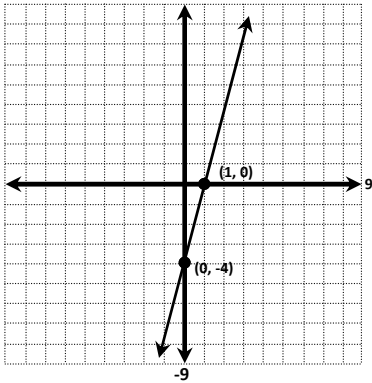
- A. $y = \frac{3}{2}x - 3$
- B. $y = -\frac{3}{2}x - 3$
- C. $y = \frac{2}{3}x - 3$
- D. $y = \frac{2}{3}x + 3$



2) What is the equation of the line shown in the graph above?

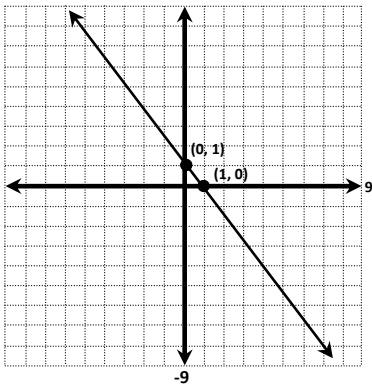
- A. $y = -\frac{5}{3}x + 3$
- B. $y = 5x + 3$
- C. $y = -\frac{3}{5}x + 3$
- D. $y = -3x + 5$

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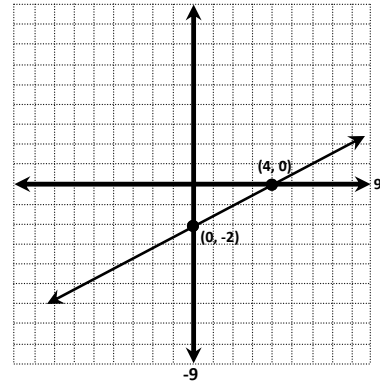
3) What is the equation of the line shown in the graph above?

- A. $y = \frac{1}{4}x - 4$
- B. $y = -x - 4$
- C. $y = -\frac{1}{4}x - 4$
- D. $y = 4x - 4$



4) What is the equation of the line shown in the graph above?

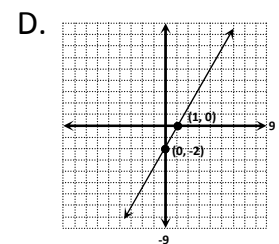
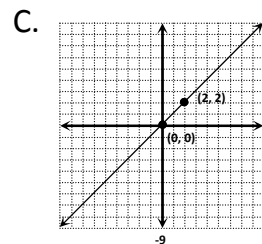
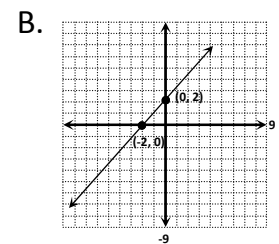
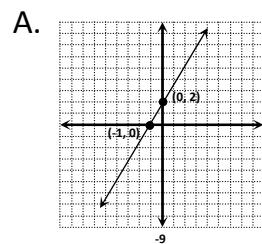
- A. $y = x + 1$
- B. $y = -x + 1$
- C. $y = -x$
- D. $y = x - 1$



5) What is the equation of the line shown in the graph above?

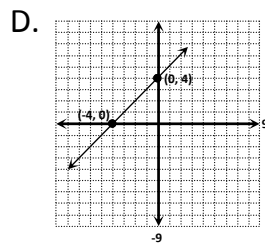
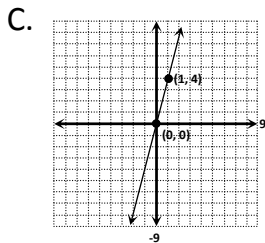
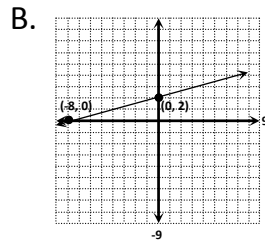
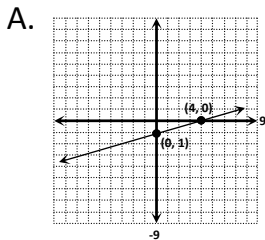
- A. $y = -2x - 2$
- B. $y = 2x + 2$
- C. $y = \frac{x}{2} - 2$
- D. $y = -\frac{x}{2} + 2$

6) Which of the following is the graph of $y = 2x - 2$?

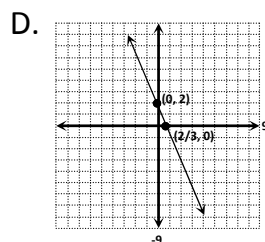
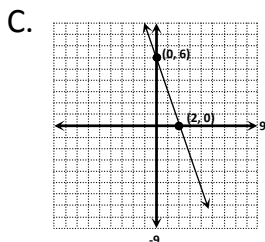
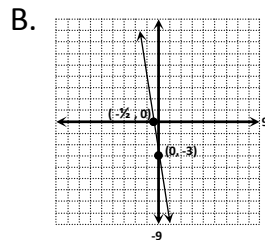
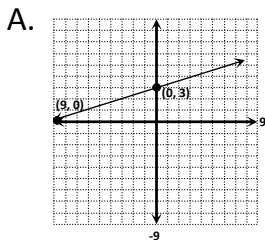


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7) Which of the following is the graph of $y = \frac{x}{4} - 1$?



8) Which of the following is the graph of $y = -3x + 6$?



9) What is the y-intercept of the line $12x + 4y = 8$?

- A. (0, -4)
- B. (2, 4)
- C. (0, 2)
- D. (0, -8)

10) What is the y-intercept of the line $6x + 3y = 15$?

- A. (0, 2)
- B. (0, 5)
- C. (0, -2)
- D. (2, -3)

11) What is the y-intercept of the line $2x - 6y = 12$?

- A. (0, -2)
- B. (0, -6)
- C. (0, 6)
- D. (0, 12)

12) What is the y-intercept of the line $3x - 4y = -16$?

- A. (0, 16)
- B. (0, 8)
- C. (0, 4)
- D. (0, -8)

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13) What is the y-intercept of the line
 $3x - 6y = -36$?

- A. (0, -6)
- B. (-12, 0)
- C. (0, 6)
- D. (0, -3)

14) What are is the x-intercept of the line
 $6x - 4y = 12$?

- A. (0, 3)
- B. (3, 0)
- C. $(\frac{2}{3}, 0)$
- D. (2, 0)