



Examples

Horizontal and Vertical Lines

Based on power point presentations by Pearson Education, Inc.
Revised by Ingrid Stewart, Ph.D.

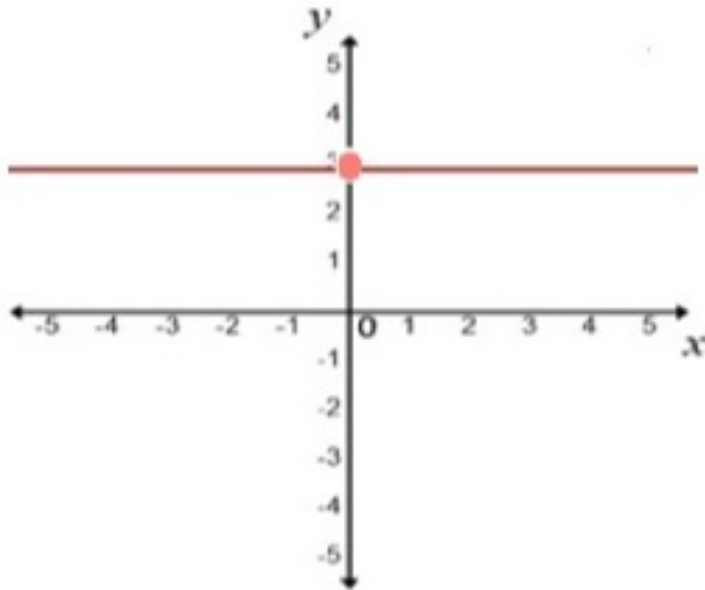
Learning Objectives

1. Write and graph horizontal lines.
2. Write and graph vertical lines.

Example 1: Graph a Horizontal Line

Graph the line $y = 3$ in a rectangular coordinate system.

From the equation we know that we are dealing with a horizontal line. We note that the y -intercept is 3, and the point associated with this intercept is $(0, 3)$. Let's plot this point and then simply draw a horizontal line through it that is parallel to the x -axis.

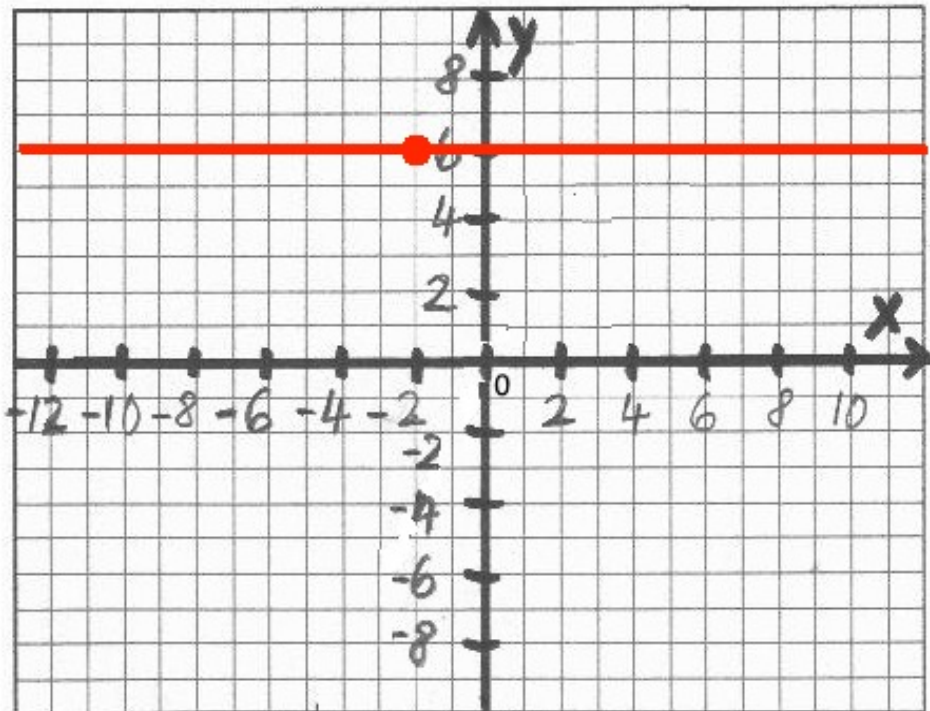


You MUST memorize that $y = b$ pictorially is a horizontal line!

Example 2: Write a Horizontal Line

Write an equation of a horizontal line through the point $(-2, 6)$.

To help us with the task, let's plot the point $(-2, 6)$ and then draw a horizontal line through it that is parallel to the x -axis.



We know that a horizontal line has an equation of $y = b$, where b is the y -intercept of the line.

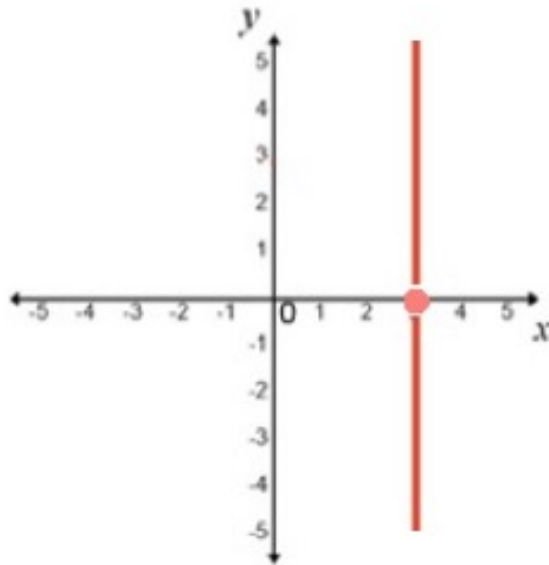
In the graph, we see that the y -intercept is 6.

Therefore, the equation of the horizontal line through the point $(-2, 6)$ must be $y = 6$.

Example 3: Graph a Vertical Line

Graph the line $x = 3$ in a rectangular coordinate system.

From the equation we know that we are dealing with a vertical line. We note that the x -intercept is 3, and the point associated with this intercept is $(3, 0)$. Let's plot this point and then simply draw a vertical line through it that is parallel to the y -axis.

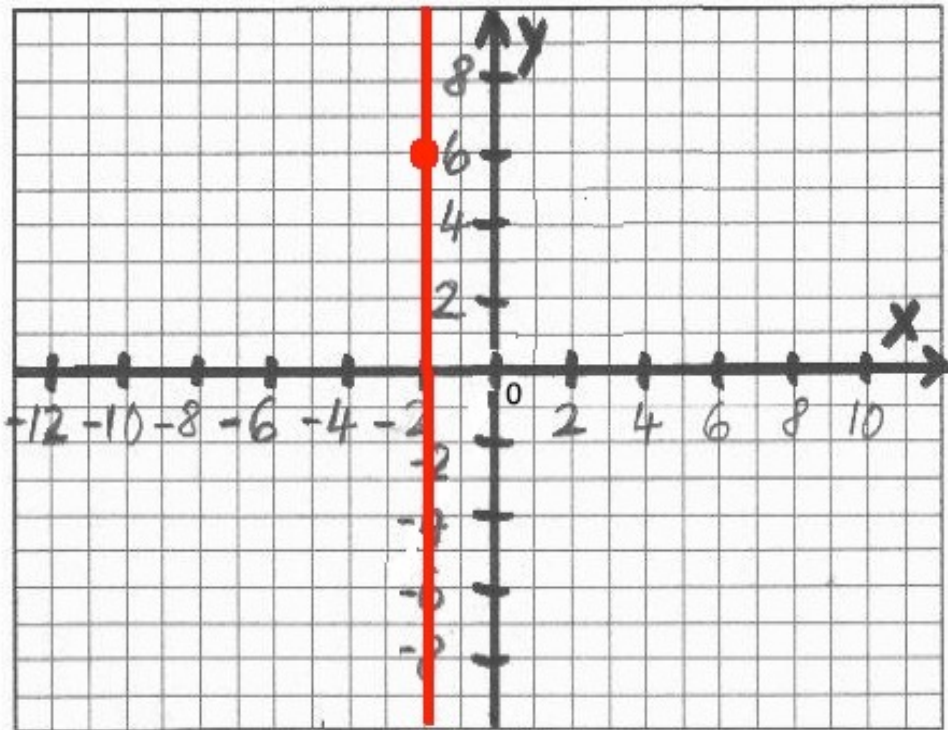


You MUST memorize that $x = a$ pictorially is a vertical line!

Example 4: Write a Vertical Line

Write an equation of a vertical line through the point $(-2, 6)$.

To help us with the task, let's plot the point $(-2, 6)$ and then draw a vertical line through it that is parallel to the y -axis.



We know that a vertical line has an equation of $x = a$, where a is the x -intercept of the line.

In the graph, we see that the x -intercept is -2 .

Therefore, the equation of the vertical line through the point $(-2, 6)$ must be $x = -2$.