

# Algebra I

## Notes 6.1, Part 1 Verifying a Solution

**Objective:** Determine if a point is a solution to a linear equation by graphing the line and the point and establishing if the point is on the line AND by verifying that the ordered pair  $(x, y)$  makes the equation true.

An equation is **true** for an ordered pair  $(x, y)$  if when the values of  $x$  and  $y$  are substituted into the equation, both sides of the resulting equation are **equal**.

An equation is **false** for an ordered pair  $(x, y)$  if when the values of  $x$  and  $y$  are substituted into the equation, the sides of the resulting equation are **unequal**.

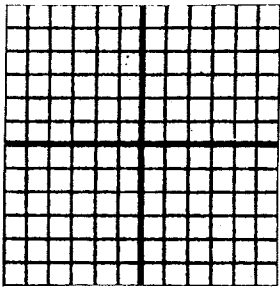
A point is a **solution** to an equation if the ordered pair  $(x, y)$  makes the equation **true**. The point **will** be on the line.

A point is **not a solution** to an equation if the ordered pair  $(x, y)$  makes the equation **false**. The point **will not** be on the line.

### Example 1

Determine if the point  $(2, 3)$  is a solution to the equation  $y = 2x - 1$ .

Graph the line and the point.



The point  $(2, 3)$  ( is / is not ) ON the line.

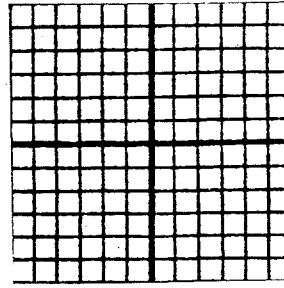
The point  $(2, 3)$  makes the equation ( true / false ).

The point  $(2, 3)$  ( is / is not ) a solution to the equation  $y = 2x - 1$ .

### Example 2

Determine if the point  $(4, -1)$  is a solution to the equation  $y = -\frac{1}{2}x + 3$ .

Graph the line and the point.



The point  $(4, -1)$  ( is / is not ) ON the line.

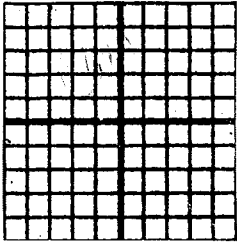
The point  $(4, -1)$  makes the equation ( true / false ).

The point  $(4, -1)$  ( is / is not ) a solution to the equation  $y = -\frac{1}{2}x + 3$ .

Example 3

Determine if the point  $(-1, 1)$  is a solution to the equation  $y = 2x - 1$ .

Graph the line and the point.



The point  $(-1, 1)$  ( is / is not ) ON the line.

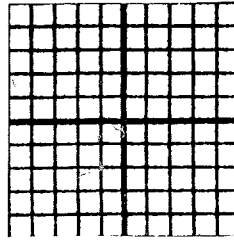
The point  $(-1, 1)$  makes the equation ( true / false ).

The point  $(-1, 1)$  ( is / is not ) a solution to the equation  $y = 2x - 1$ .

Example 4

Determine if the point  $(-2, 3)$  is a solution to the equation  $3x + y = -3$ .

Graph the line and the point.



The point  $(-2, 3)$  ( is / is not ) ON the line.

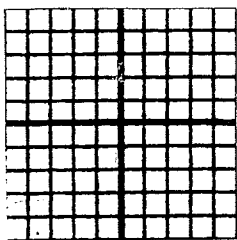
The point  $(-2, 3)$  makes the equation ( true / false ).

The point  $(-2, 3)$  ( is / is not ) a solution to the equation  $3x + y = -3$ .

Example 5

Determine if the point  $(-2, 3)$  is a solution to the equation  $x + 2y = 4$ .

Graph the line and the point.



The point  $(-2, 3)$  ( is / is not ) ON the line.

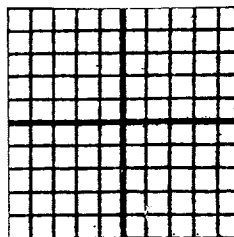
The point  $(-2, 3)$  makes the equation ( true / false ).

The point  $(-2, 3)$  ( is / is not ) a solution to the equation  $x + 2y = 4$ .

Example 6

Determine if the point  $(2, 0)$  is a solution to the equation  $2x + y = 2$ .

Graph the line and the point.



The point  $(2, 0)$  ( is / is not ) ON the line.

The point  $(2, 0)$  makes the equation ( true / false ).

The point  $(2, 0)$  ( is / is not ) a solution to the equation  $2x + y = 2$ .