Section 4.1: Graphing Linear Equations Name: _____

In Class Notes

A _____ _____ is an equation whose graph is a line. The points on the _____ are solutions of the equation.

Three Parallel Languages

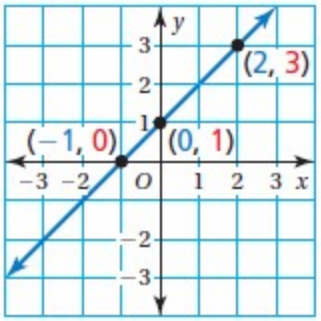
Tables

x	y	(x, y)
−1	0	(−1, 0)
0	1	(0, 1)
2	3	(2, 3)

Equations

$y = x + 1$

Graphs



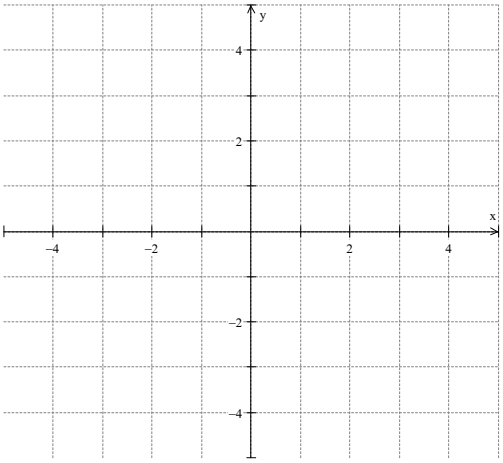
Independent Variable:

Dependent Variable:

Graphing a Linear Equation

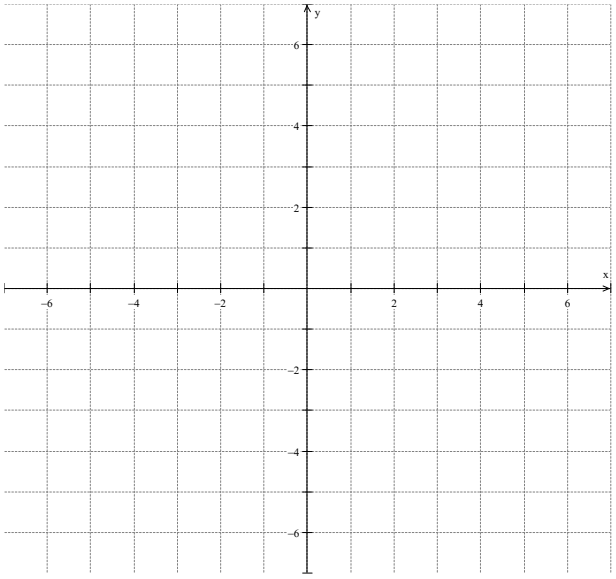
Ex:) Graph the following by first making a table of values. Notes:

$y = -2x + 1$



OYO:) Graph the following by first making a table of values. Notes:

$y = 3x$

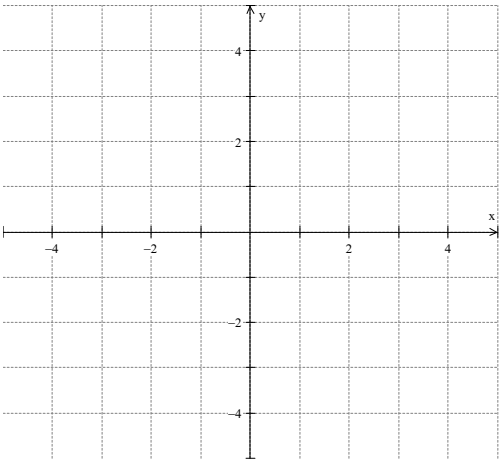


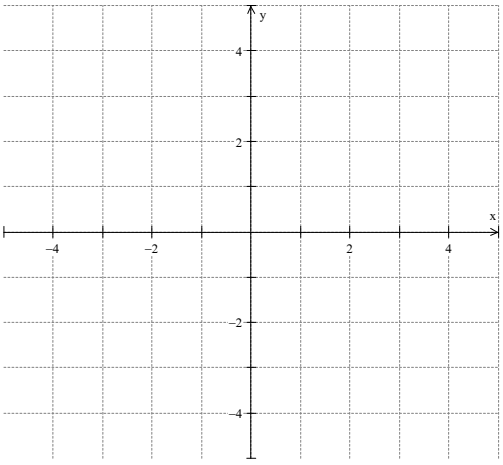
What if the equation only has one variable?

Graph the following by first making a table of values.

Ex:) $y = 4$

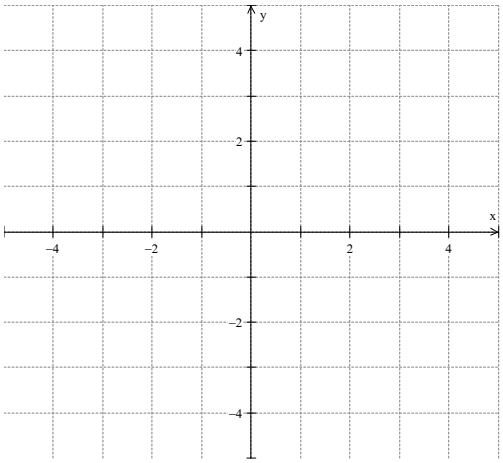
Ex:) $x = -1$



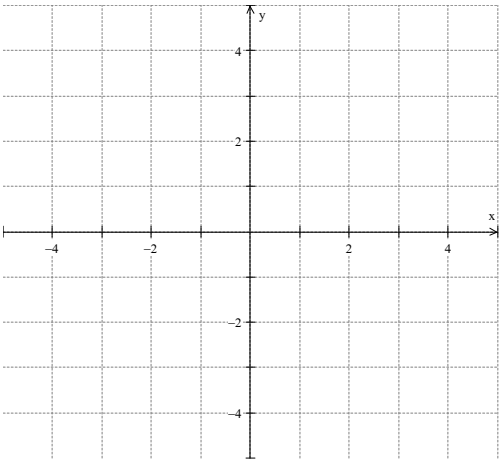


Graph the following by first making a table of values.

OYO:) $y = -3$

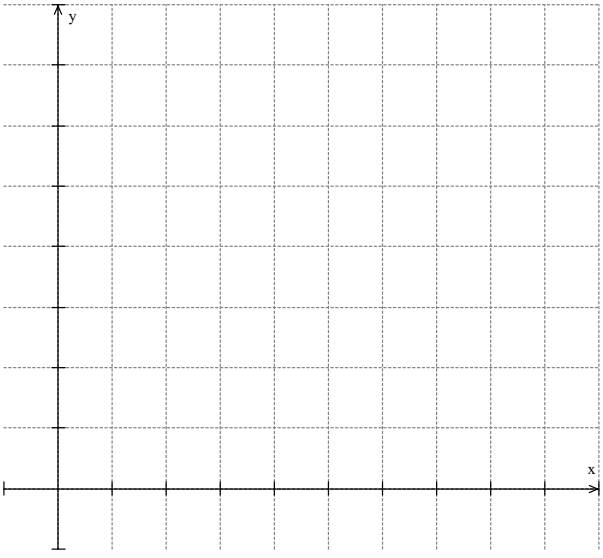


OYO:) $x = 2$



Modeling Real Life

Ex:) The wind speed y (in miles per hour) of a tropical storm can be modeled by the equation $y = 2x + 66$, where x is the number of hours after the storm enters the Gulf of Mexico. When does the storm become a hurricane?



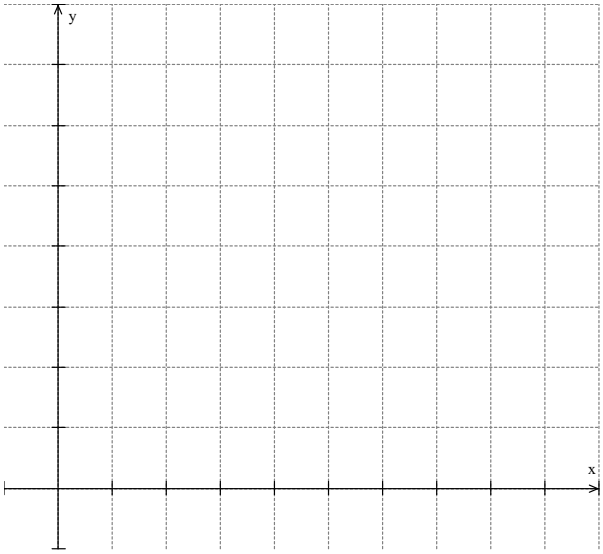
Notes:

A tropical storm becomes a hurricane when wind speeds are at least 74 miles per hour.

OYO:) The total cost y (in dollars) to join a cheerleading team and attend x competitions is represented by the equation $y = 10x + 50$.

Notes:

a. Graph the linear equation.



b. You have $75 to spend. How many competitions can you attend?