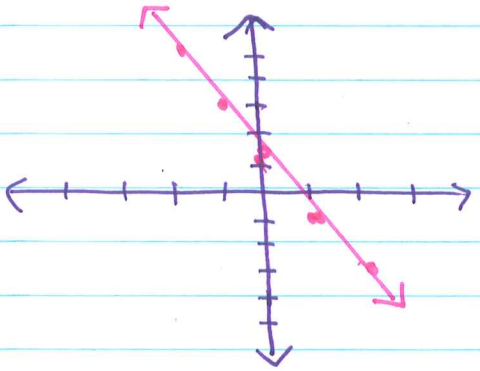
Chapter 4 Graphing and Writing Linear Equations

4.1 Graphing Linear Equations p. 144

A **linear equation** is an equation whose graph is a **line**. The **points** on the line are **solutions** of the equation. **x** is to the **first power**. For example $y = x + 1$

non-example $y = x^2 + 1$

Graph $y = -2x + 1$



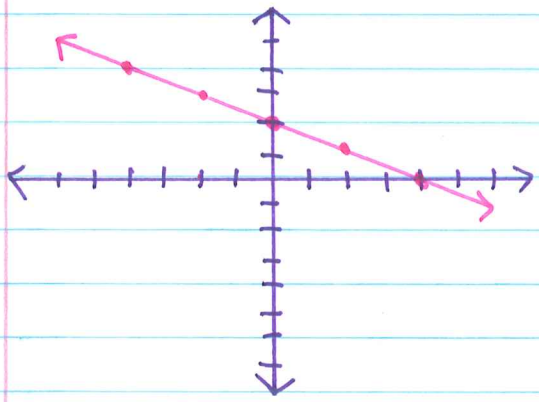
① (T-chart)

x	y
-2	5
-1	3
0	1
1	-1
2	-3

* 5 x values
2 negative
0
2 positive

② plot the ordered pairs
③ draw a line; put arrows

Graph $y = -\frac{1}{2}x + 2$



x	y
-4	4
-2	3
0	2
2	1
4	0

* use #'s divisible by 2 if the coefficient of x is a fraction

* if coefficient of x is $\frac{1}{3}$, use

-6, -3, 0, 3, 6 etc

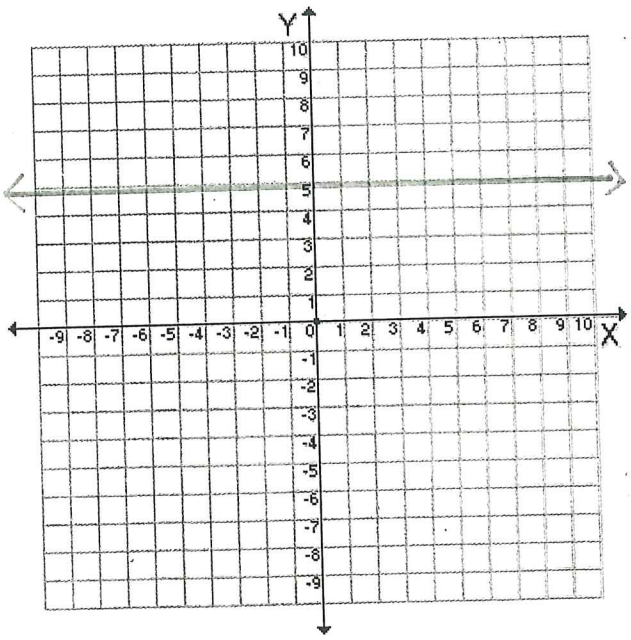
Special Graphs:

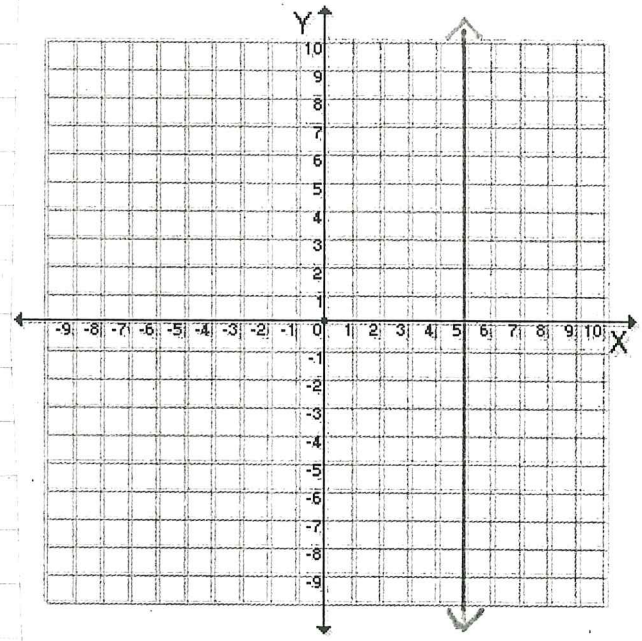
$y = 5$ $\qquad\qquad$ $x = 5$

* don't need to make a t-chart for these, this is just for demonstration purposes

x	y
-2	5
-1	5
0	5
1	5
2	5

x	y
5	-2
5	-1
5	0
5	1
5	2





if $y = \#$, will always be a horizontal line passing through $(0, y)$

if $x = \#$, will always be a vertical line passing through $(x, 0)$

* see p. 145 example 3 for real life application