Name _____

Lab 4.1B – The *x*-*y* Coordinate System

Date _____ Period _____

Materials: MathChamber website Unit 4 – web-based graphing calculator (shodor.com); Colored pencils or markers

Key Learning: Understand how to represent data in two variables in the *x*-*y* coordinate system.

Lab Directions on next page

***this is a* PAIRS ACTIVITY**

SAMPLE INPUT-OUTPUT (FUNCTION) TABLE

for $y = x + 3$ or $f(x) = x + 3$

fill in the missing values

IN (*x*)	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6
OUT (*y*)	-3			0	1					6			9

Background: The *x* values in a table are sometimes referred to as the input values, since they are the values used with a rule (sometimes called an equation or function) for *x*. The *y*-values are the output values, since they are the result of what happens to the input (*x*) value.

For many data relationships that we will explore, *y* is referred to as a "function" of *x*, often written as ***f(x)***.

Guided Directions

this is a
PAIRS
ACTIVITY

For each of the following rules (equations), complete the corresponding table. Take a full 8.5 x 11 sheet of graph paper and graph the input-output tables below. Draw a **straight or curved** line through the points for each input-output rule. Be sure to label and/or color-code your graphs. **Use the web-based graphing calculator** found on the mathcamber.com Unit 4 web page as a resource to check your work.

Warning: ***Some points may not fit on your graph***

a) $y = 2x + 1$ or $f(x) = 2x + 1$

IN (x)	-6	-4	-2	0	2	4	6
OUT (y)							

b) $y = -\frac{1}{2}x$ or $f(x) = -\frac{1}{2}x$

IN (x)	-6	-4	-2	0	2	4	6
OUT (y)							

c) $y = x^2$ or $f(x) = x^2$

IN (x)	-6	-4	-2	0	2	4	6
OUT (y)							

Compare the graphs in part (a) thru (c). How are they similar? How are they different?