Alg 2CP Assignment Sheet 2012-2013

Chapter 2: Linear Relations & Functions

(Note: LHC = Left Hand Column Problems, CC = Center Column Problems)

Sect.	Date	Warm-up	Classwork	Homework
2.1	9/11	I Have Who Has	Lesson: Relations and Functions	Pg. 62-63 #13-22, 23-33 odd, 35-37
2.2	9/12	Comm w Tiles	Lesson: Linear Equations	Pg. 69-70 #10-19, 23-33 odd, 34, 35-47 odd, 50-52, 59
2.3	9/13	Crack the code	Lesson: Slope	Pg. 75 #13-29 odd, 30, 31, 35-37
2.4	9/14	HW Turn In	Lesson: Writing Linear Equations	Pg. 83-84 #13-23, 31-38 omit 35 Graphing Lines W/S (Below)
No Sch.	9/17	None	No School-Rosh Hashanah	None
2.5	9/18	I Have Who Has	Lesson: Statistics-Using Scatter Plots. Introduce entering data & scatter plots in graphing calc	Pg. 88 #2, 3, 4 graph by hand For #2 have 1995 be t=0 & #3 have 1999 be t=0.
2.5 Ext.	9/19	Bingo	Lesson: Graphing Calc Lab Lines of Regression Introduce Piecewise Func.	Pg. 93 #1-6…#1-3 have 1985 be t=0. After completing #2 & 5, write a prediction equation using 2 points.
Ab. Val.	9/20	Human Calc 0-9	Lesson: Absolute Value Investigation	Graphing Absolute Value & Piecewise Functions W/S (Below)
2.7	9/21	HW Turn In	Lesson: Graphing Inequalities	Pg. 104-105 #11-21 odd, 22-26, 29, 31, 42, 43
Rev	9/24	Find the X Tile	Review	Finish Review Assignment You Can Sheet
Test	9/25	None	**Ch. 2 Test** Linear Relations& Functions	No HW

2.4 Graphing Lines Worksheet

Graph the following.

1. $y=\frac{1}{2}x-3$
2. $y=4x+3$
3. $y=-\frac{2}{3}x+5$
4. $2x+3y=12$
5. $4x-3y=9$
6. $x=4$
7. $y=-2$
8. $4x=-12$
9. $3y-9=0$
10. $y=x+\frac{3}{2}$

Graphing Absolute Value Functions and Piecewise Functions

Graph the absolute value functions in # 1 — #5. Plot the "vertex" point and then graph the rest of the V.

1. $y=|x+3|$
2. $y=|x|+4$
3. $y=|2x|$
4. $y=2|x-3|-5$
5. $y=|4x+8|+1$

Graph the piecewise function in #6 — #8.

6. $y=\begin{cases}-x & x\le 3\\ 2 & x>3\end{cases}$
7. $y=\begin{cases}-1 & x<-2\\ 1 & x>2\end{cases}$
8. $y=\begin{cases}-1 & x\le -2\\ x & -2<x<2\\ -x+1 & x\ge 2\end{cases}$

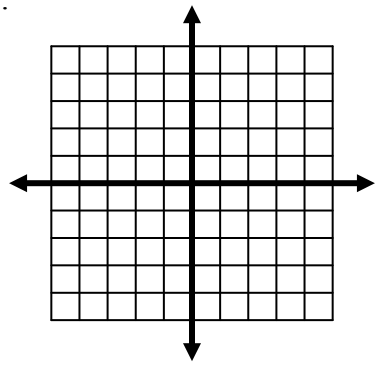
ALGEBRA 2CP
SECTION 2.6

Name_____
Period_____

ABSOLUTE VALUE GRAPH INVESTIGATION

Graph $y = |x|$ by completing the chart below.

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



What shape is the graph?_____All absolute value function graphs are the same shape. The only changes in the graph are the position of the point or vertex of the graph and the slope of the sides of the graph. What is the slope of the left side of the V? _____What is the slope of the right side of the V?_____ What is the relationship between these two slopes?_____

You are now going to do an investigation on the graphing calculator so see how the absolute value graph changes. From this investigation you will hopefully come up with some generalizations about the graph of absolute value functions. The absolute value function is found using the **MATH** key followed by arrowing over to **NUM** and selecting **abs#.** #Use the following window settings: $X\min = -11.75$ $X\max = 11.75$ $Xscl = 1$ $Y\min = -7.75$ $YMax = 7.75$ $Yscl = 1$

Enter the functions in the **y=** menu one at a time. Display y_1 before you enter y_2. Display y_1 and y_2 before you enter y_3. Display all three functions after you enter y_3. Answer the questions as you go along. Be careful with the parentheses.

$y_1 = abs(x)$

$y_2 = abs(2x)$ How has the graph changed?_____

$y_3 = abs(x/3)$ How has the graph changed?_____

In general, what does the letter **a** do in the graph $y = |ax|$?_____

_____

Clear out the three functions and enter the following three functions in the same manner as above. Answer the questions that follow.

$y_1 = abs(x)$

$y_2 = abs(x+2)$ How has the graph changed?_____

$y_3 = abs(x-4)$ How has the graph changed?_____

In general, what will the letter **b** do to the vertex of the Vin the graph of $y = |x-b|$? _____

_____

What will happen to the vertex of the V in the graph of $y = |x+b|$?_____

_____

What are the coordinates of the vertex of the V in the graph of $y = |x-5|$?_____

What about $y = |x+1|$ _____ #Graph each one and see if you are right.

over→

Clear out the three functions and enter the following three functions in the same manner as before. Answer the questions that follow.

$y_1 = abs(x)$

$y_2 = abs(x) + 3$ What happened to the vertex?_____

$y_3 = abs(x) - 4$ What happened to the vertex?_____

What will happen to the vertex of the V in $y = |x| - c$?_____

What will happen to the vertex of the V in $y = |x| + c$?_____

Clear out the three functions and enter the following three functions. Be careful with the parentheses on the calculator.

$y_1 = |2x + 6|$

$y_2 = |2(x + 3)|$

$y_3 = 2|x + 3|$

What do you notice about the graphs of these three functions?_____
Why is that?_____

Clear out the three functions and enter the following function.

$y_1 = |4x - 8|$ What are the coordinates of the vertex?_____ Could you have predicted this?_____ How?_____
_____

What is the best form of this function for you to use to predict where the vertex will be?_____
Predict the coordinates of the vertex of $y = |5x - 20|$._____ See if you are correct by graphing the function.

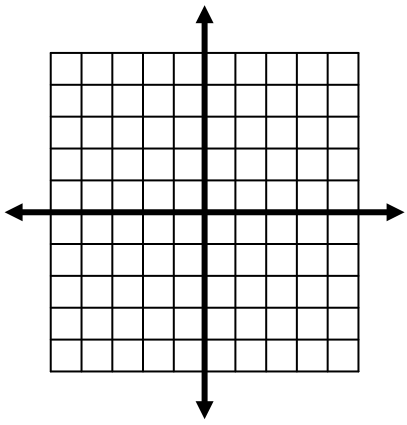
Where is the vertex of $y = |8x + 48|$? _____ What about $y = |3x - 15|$?_____. Verify your answers by graphing the functions on the calculator.

Predict the coordinates of the vertex of $y = |3x - 12| + 2$. _____ What is the slope of the left side of the graph?_____
What about the right side?_____

In general to graph an absolute value function, think about where the vertex is, plot it and then graph the left and right side of the V by using the slope. An alternate method is to plot the vertex and then plot a point or points on either side of the vertex by plugging in x-values and solving for the corresponding y-values.

Graph $y = |2x - 6| - 1$ on the axis to the right.

Check your graph on the calculator.



One final question. Will the graph of an absolute value function ever open downward?_____ If your answer is yes, what would the equation of the function look like?_____
_____