Week 6 Algebra 2 Assignment:

Day 1: pp. 113-115 #1-13, 20-26, 33-37
Day 2: pp. 117-118 #1-25 odd, 28-32
Day 3: pp. 122-123 #1-17 odd, 19-23, 27-31
Day 4: pp. 127-129 #2-22 even, 28-32
Day 5: pp. 132-133 #1-33 odd

Notes on Assignment:

Pages 113-115

Work to show:

#1-10: Answers only
#11-13, 20: Two answers for each. Show work as needed.
#21-26: Show tables where needed, one graph per problem, and the stated domain and range.
#33-37: There is work to be shown for these problems.

#1-5: Use the vertical line test.

#6-10: Your choices are linear, constant, greatest integer, absolute value, and exponential.

#11: When you put in -1, remember that a negative exponent needs to be "kicked downstairs" in order to become positive. Do that first.

#13: The greatest integer of an integer is the integer itself. The greatest integer of any other number is the integer directly to that number's *left* on the number line.

#21-26: You will most likely need to make tables for these. Put in enough points to get an idea of what the graph looks like, based on what you know about each type of function. For example, you know that the absolute value function will be a "V" so put in enough points to find the vertex and get an idea of the rest of the shape.

Also, for the domain, you need to include all numbers that you are using for x. Exclude any numbers that make your function undefined. For the range, the easiest thing to do is look at your graph. What y-values are used?

#22: This will just be dots, as you are given your specific domain values.

#33-35: Change in y over change in x.

#36: Put this in slope-intercept form to find the slope. The slope of a parallel line would be the same.

#37: Put this in slope-intercept form to find the slope. The slope of a perpendicular line would be the negative reciprocal.

Page 117-118:

Work to show:

#1-9: Write the function with the indicated operation and then simplify.
#11-25: Show work.
#28-32: There is work to be shown for all of these.

#9: Remember that this is *h(g(x)).* Start on the inside. Take the function *g(x)* and put it into the function *h* as "stuff."

#11: When you add functions together, you are adding the corresponding *y*-values. So, for the *x*-coordinate of -2, you must add the 9 from the function *f*, to the 3 from the function g. These are the *y*-coordinates that go with the *x*-coordinate of -2.

#13: First, add the 2 functions together to find *f+g* and subtract the functions to find *f-g*. After finding these, put in the given *x* values.

#15: First, multiple the 2 functions together to find *fg* and divide the functions to find *f/g*. After finding these, put in the given *x* values.

#17: Remember that this is *f(g(x)).* For *f(g(-2))*, put -2 into the function *g*. What you get out is what you put in to the function *f*.

#19: You have to find both *f(g(2))* and *g(f(2))*. follow the process the same as for #17. Then for *g(f(2))*, put 2 into the function *f*. What you get out is what you put in to the function *g*.

#21-23: For *f(g(x)),* put the function *g* into the function *f* as "stuff." For *g(f(x))*, put the function *f* into the function *g* as "stuff."

#25: In other words, does *f(g(x)) = g(f(x))*.

#28-32: For all of these, the first thing you need for all of these is the slope. If it is not given, then you need to find it using $\frac{\Delta y}{\Delta x} = \frac{y_1 - y_2}{x_1 - x_2}$ (i.e. change in y over the change in x). After that, put the slope (*m*) into the equation *y = mx + b*. Then take one of the points and put it in for *x* and *y* so that you can solve for *b*.

#32: Perpendicular slopes are negative reciprocals. Take the slope of the given line and use the negative reciprocal of it for you line.

Pages 122-123:

Work to show:

#1-17: Follow the instructions below. I suggest you used the graph paper available on the CHAT Math website. I need to see labels, tests, and shading!
#19-23: Answers only is fine
#27-31: Show work as needed.

#1-17: Follow the following steps for graphing these inequalities:

- Write down the inequality as an equation (with an equal sign instead of the inequality sign). This is your boundary line.
- Write down whether the boundary is dotted or solid. If there is no equal bar under the inequality, then it is dotted. If there is an equal bar under the inequality, then it is solid.
- Solve the equation for y so that it is in slope-intercept form and easy to graph. If the equation has no y, (i.e. x = #) then it is a vertical line.
- Graph the boundary line and label it.
- Test a point on one side of the boundary line in the original inequality. A good point to use is (0,0) (unless the boundary goes through that point.)
- Shade the "true" side. Do not shade the "false" side.

#15: You may need a table for this. Remember that it will be a "V" shape.

#17: You will probably need a table for this. Remember that when you put in a negative number for x, you will need to deal with the negative exponent by "kicking it" downstairs.

#19-23: Remember that a relation is a set of ordered pairs and a function is a relation with all unique *x*-coordinates.

Pages 127-129:

Work to show:

#2-20: Write the formula with your values inserted. Simplify your answer.
#22, 28-29: One graph for each
#30-32: Show work in solving each.

#2-10: Use the distance formula $d = \sqrt{(x_1 - x_2)^2 + (y_1 - y_2)^2}$ and the formula for midpoint $\left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2} \right)$ for all of these problems.

#12-14: These are coordinates on a number line, not on the x-y coordinate system. For distances on a number line between 2 points we take |a-b| or |b-a|.

#20: Use the 3-dimensional distance formula $d = \sqrt{(x_1 - x_2)^2 + (y_1 - y_2)^2 + (z_1 - z_2)^2}$.

#22: Sketch the *x*- , *y*- and *z*-axes as you see them on page 126. Draw the point.

#28-29: Follow the directions above from page 122 #1-17.

#31: The "stuff" inside the | | equals 5 or the "stuff" inside the | | equals -5. Solve these 2 equations.

#32: Greater than goes to "or" and Less than goes to "and" when you have absolute value inequalities.

Pages 132-133:

Work to show:

#1-7: Answers only
#9-11: Five answers for each
#13: Answer only
#15: Show the formula filled in with your numbers and simplify. There are 3 separate parts for this problem.
#17: Answer and explanation
#19-23: Find the equations and graph
#25-29: Show combination and then simplify
#31-33: Graphs

Chapter review – no notes.