Week 12 Algebra 1 Assignment:

Day 1: pp. 226-228 #1-17, 20-25
Day 2: pp. 231-233 #1-19 odd, 22-26, try MoM
Day 3: pp. 236-237 #2-10 even, 11-22
Day 4: pp. 242-243 #2-16 even, 20-24
Day 5: pp. 249-251 #1-29 odd, 33-37

Notes on Assignment:

Pages 226-228:

Work to show:
#1-7: Four answers and a circle graph for each
#8-12: Answers only
#13-17: Three answers for each
#20-25: Show work needed to solve the equations.

#1-7: For these problems, look at the following:

- To be a relation, it must be a set of ordered pairs.
- To list the domain, list all of the 1st coordinates (x-coordinates).
- To list the range, list all of the 2nd coordinates (y-coordinates).
- To tell whether it is a function or not, see whether there are any x-coordinates paired with more than one y-coordinate.
- To make the circle model, put the domain elements in one circle and the range elements in the 2nd circle. Draw arrows from the domain elements to their range elements.

Pages 231-233:

Work to show:
#1-10: Answers only
#11-19: Table and a graph for each
#22-26: Show work solving.

#1-9: Do the Vertical Line Test. If you can draw at least one vertical line that intersects your graph in more than one point, then it is *not* a function.

#11-19: If you are given specific x-values, then those are the only x-values you can put in your table. If you are not given specific x-values, put enough of your own x-values in the table in order to see what the graph is going to look like and connect your points with a line or curve.

*Note: You can download graph paper from the CHAT Math website (www.mcg.net/nelson/chatmath.htm) to use for the graphing, or you can draw your own graphs.

#19: If y is between -1 and 3, that means it also contains the y-values that are fractions. Put a few numbers in for y in your table. Since $x = 2$, that means you must put 2 in the x-column for all of the y's.

#25-26: You will need to solve each inequality and then graph to find out what your final answer is.

#23: Absolute value equations must always be written as 2 equations.

#24: Remember to do the "flip-n-switch."

Pages 236-237:

Work to show:

#2-10: Show tables and graphs for each.
#11-14: Two answers for each
#15-18: Show work in solving.
#19-22: Answers only

#2-10: To graph linear equations, you should

- Solve for y to make finding y-values in your table easier.
- Make a table with at least 3 values. (If you use 0 for one of your values it will give you the y-intercept.)
- Graph the three points.
- Connect the points and draw a line (with arrows on each end).
- Label the line.

*Note: You can download graph paper from the CHAT Math website (www.mcg.net/nelson/chatmath.htm) to use for the graphing, or you can draw your own graphs.

#11-14: To find the y-intercept, let $x = 0$ and solve for y. To find the x-intercept, let $y = 0$ and solve for x.

#15-16: To solve for y, you will first need to get all of the y-terms on one side and the other terms on the other side. Then divide both sides by the coefficient of y.

Pages 242-243:

Work to show:

#2-4: Answers only
#6-16: Show the work for finding the slope as noted below.
#20-24: Write the expression, substitute in for the variables, and calculate the answer.

Notes for this section: Slope is defined as $m = \frac{rise}{run} = \frac{\Delta y}{\Delta x} = \frac{y_1 - y_2}{x_1 - x_2}$.

#2-4: When given a graph, you need to pick out 2 clear points on the line. Then, going from one point to the other, determine the rise and run that got you there. The slope then would equal the $\frac{rise}{run}$. (Note that if you go down instead of up, your rise is negative and if you run towards the negative numbers instead of the positive numbers, your run is negative.)

#6-16: When given 2 points, you find the slope by using the $m = \frac{rise}{run} = \frac{\Delta y}{\Delta x} = \frac{y_2 - y_1}{x_2 - x_1}$.

You subtract the y's on the top and the x's on the bottom. (Make sure that you start with the same point for both subtractions.)

example: the slope of the line going through (-2, 4) and (1,9) is

$$m = \frac{\Delta y}{\Delta x} = \frac{y_2 - y_1}{x_2 - x_1} = \frac{9-4}{1-(-2)} = \frac{5}{3} \quad \text{or} \quad m = \frac{\Delta y}{\Delta x} = \frac{y_2 - y_1}{x_2 - x_1} = \frac{4-9}{-2-1} = \frac{-5}{-3} = \frac{5}{3}$$

It does not matter which point you start with.

Pages 249-251:

Work to show:

#1-7: Graph for each
#9-15: Show the work needed to solve for y, as demonstrated below in the notes.
#17-29: Show the work needed to solve for y, as demonstrated below in the notes. Then graph each.
#33-35: Use factor trees to find the LCM. Show work.
#36-37: Show work in canceling factors.

Notes for this section: The slope-intercept form of a linear equation is $y = mx + b$ where m is the slope and $(0,b)$ is the y-intercept.

To graph linear equations using the slope-intercept form, you

1. Graph the y-intercept. From that point, use your rise and run to find another point.
2. Connect the points and draw your line.
3. Label the line

#1: If the slope is an integer, such as 3, make sure that you make it a fraction by putting it over 1. It will look like $\frac{3}{1}x$. That way you will have a rise and a run.

#3: If there is a "–" in front of the x, put a 1. It should read -1x. You will also need to put the -1 over 1 so that you have both a rise and run.

#5: The negative can go either in the numerator or the denominator (but not both!).

#7: Think of this as $y = 0x - 2$. Or, you can make a table and fill in all of the y's with -2 since $y = -2$ no matter what x is.

#9-15: Carefully solve these equations for y. When you have to divide both sides by a number, write it under each term instead of writing it under the entire side.

Example: Write $3x - 4y = 16$ in slope-intercept form.

$$3x - 4y = 16$$
$$3x - 4y - 3x = 16 - 3x$$
$$-4y = -3x + 16$$
$$\frac{-4y}{-4} = \frac{-3x + 16}{-4}$$

It is much easier if you write the -4 under each term.

$$\frac{-4y}{-4} = \frac{-3x}{-4} + \frac{16}{-4}$$
$$y = \frac{3}{4}x - 4$$

#17-29: Solve these equations for y so that they are in slope-intercept form. Then graph the equations as you did for #1-7.

#33-34: Factor 15 and 36 and then find the LCM. Use that number as the common denominator when adding and subtracting, and for #34, use the LCM to clear the equation of fractions.

#36: Simplify the fraction.

#37: Use cross canceling before you multiply.