Week 8 Algebra 2 Assignment:

Day 1: pp. 158-159 #1-15 odd
Day 2: pp. 161-163 #1-9 odd, 17-23 odd, 30-34
Day 3: pp. 166-167 #1-29 odd
Day 4: Chapter 4 test
Day 5: pp. 172-173 #1-23 odd, 29-33

Notes on Assignment:

Pages 158-159

Work to show:
All problems: Number each of the 5 steps.

Note: These are 5 step word problems. Number each step. When you get the equation set up (which will be a quadratic equation) you can solve it by any method you want.

#1: Consecutive integers are always x and x+1.

#3: Consecutive odd integers are always x and x+2.

#5: Let x be one number. How would you express "18 more than the number"?

#7: The square of a number means it has an exponent of 2, such as x^2.

#9: You must draw a picture for this. Draw the original rectangle and then take off a strip on the bottom that is x units wide and a strip off one side that is x units wide. Write the dimensions of your new rectangle on your picture. The area (length times width) of the smaller rectangle must equal 1739.

#11: If you cut 3-inch squares out of the corners, then the height of your box will be 3 inches when you fold up the sides. You need to represent the length of the sides of the bottom of the box before you can set the volume equal to 243. Draw a picture.

#13: When you draw the picture you will see that you get a right triangle. Put in your amounts and use the Pythagorean Theorem.

#15: Isosceles means that the 2 legs are equal in length. You will use the Pythagorean Theorem for this problem.

Pages 161-163:

Work to show:

For all of these problems use the following steps:

1. Put the inequality in standard form and factor completely. The values for which each factor equals 0 are your critical points.
2. Put each critical point on the number line. Decide whether the point is open or closed.
   - < or > has an open circle
   - ≤ or ≥ has a closed circle
3. Draw a "wall" at each critical point, separating the number line into intervals.
4. Write each factor above and to the left of the number line. For each factor, decide whether the interval between the walls is positive or negative by putting in any number in the interval. Write a "+" or "-" in the interval.
5. Decide whether you are looking for a positive or negative product and which intervals will give you that signed product. This is your solution. Color it on your number line.

#1-9: These are already in standard form.

#17-23: Get everything on the left side first. Then factor and continue.

#32: Remember that this means f(g(x)). Take the function g and put it into the function f as "stuff."

#33: Make a table. This is an exponential equation. See section 3.5 if you need help.

#34: Graph the border equation first, deciding whether it is dotted or solid. Then test a point on one either side of the line and shade the "true" side.

Pages 166-167:

Work to show:

#1-12: Show work
#13-16: Calculate the discriminant.
#17-20: 5 step word problems
#21-29: Show work

Chapter Review – no notes

Chapter 4 test:

You need to be able to:

- Give the discriminant of a quadratic equation. ($b^2 - 4ac$)
- Identify the number and nature of solutions
  - $b^2 - 4ac$ is positive and a perfect square – 2 rational solutions
  - $b^2 - 4ac$ is positive and not a perfect square – 2 irrational solutions
  - $b^2 - 4ac$ is zero – 1 rational solution
  - $b^2 - 4ac$ is negative – 2 complex solutions
- Solve quadratic equations by:
  - Factoring
  - Taking Square roots
  - Completing the square (divide through to make the coefficient on x^2 a 1 if needed.)
  - The Quadratic Formula
- Solve quadratic inequalities
- Translate some word problems into equations.

Pages 172-173:

Work to show:

#1-5: Answer as directed.
#7-15: Answers only is ok.
#17-23: Show work as needed.
#29-33: Show work in the distance formula.

#1: How many solutions does this equation have? Is it a linear equation or a linear function?

#13-15: The axis of symmetry will go through the vertex and will be of the form x = #. For the domain, look at the graph and see what x-values have been used for the graph. For the range, look at the graph and see what y-values have been used for the graph.

#17-19: Make an x-y table for 6 points. Then graph the points.

#21: Since the y-intercept is of the form (0, _), to find it you let x = 0 and solve. Put 0 in for x in this function and solve for f(x).

#23: For any x-coordinate, you find the y-coordinate by putting the x-coordinate in for x in the function. Put h in for x.