Name _____ Date _____

Lesson 1.2 Notes Algebra 2

Notes

Objective: *Be able to classify numbers as real number, irrational, rational, integer, whole number, and/or natural number.*

Fill in the Venn diagram on the back of this sheet.

Investigation

1. Go to the class web page and open the file "IrrationalRational.gsp" in The Geometer's Sketchpad.
2. You should see three strips of colored rectangles. The yellow rectangles represent a measurement of 1 unit, such as 1 cm or 1 yard.
3. The red rectangles measure out a rational number. Notice that the rational number is written as a fraction. You can double-click the *numerator* and *denominator* to change the value of the fraction.
4. The blue rectangles measure out an irrational number. You can double-click the calculation to change it to a different irrational number.
5. Use the selection tool (the arrow) to select the last yellow rectangle. Press + and – on your keyboard, and notice that this increases or decreases the number of rectangles.
6. Now you are ready to investigate rational and irrational numbers. The goal here is to line up the strips of rectangles so they are the same length. Start with the yellow and red strips. Change the lengths until they are exactly the same. You can drag the ruler to help you check.
7. When they are the same length, how many rectangles are in the yellow strip? _____ In the red strip? _____ What is the ratio of these two numbers? _____ Why does this make sense? _____
   _____
8. Now, try to make the yellow and blue strips the same length. Can it be done? _____ What is different about the number that measures the blue strip? _____
   _____
9. Change the values of the rational and irrational numbers (you can use some of the examples from your Venn diagram), and then repeat Steps 6-8.
10. Write down in your own words what is the difference between rational and irrational numbers:
    _____
    _____
    _____
    ___