

Name: _____

Group: _____

Math 1120

Rational/Irrational Numbers Worksheet

Spring 2011

In this worksheet, we will explore non-terminating decimals in several forms.

1. Find the decimal representation for each of the following.

(a) $\frac{2}{7}$

(b) $\frac{7}{11}$

2. This problem is much more challenging. Can you develop a way to solve it? What is the number $2.\overline{35}$ as a fraction $\frac{a}{b}$ for integers a and b in reduced form?

3. Using the methods we developed in the previous problem, consider the following. A wise student asks you: "I've heard that $0.\overline{9}$ is *really* the same thing as 1... but how do I PROVE this?" Your group should develop a response to this question as best you can.

4. The same student returns a day later and says, "I have another question. I've heard that $\sqrt{2}$ cannot be written as a fraction a over b for integers a and b . Why??"