

Student ID		

Last Name: _____

First Name: _____

Show all your work.

When appropriate,
BOX your final answer.

M\$5
Homework

1

1. Determine whether each statement is true or false. Explain your answer. (If false, give a counterexample.)
- a. Every nonterminating decimal is irrational. b. If p and q are integers, then $\frac{p}{q}$ is a rational number.

2. Determine whether each statement is true or false. Explain your answer. (If false, give a counterexample.)
- a. Every whole number is rational. b. Natural numbers are not rational.

c. Irrational numbers are not real numbers.

3. Evaluate $\frac{0}{2}$ and $\frac{2}{0}$.

4. Show that $5\frac{1}{2}$ is rational.

5. Which, if any, of the following numbers are equivalent? Explain your answer.

$$\frac{22}{7}$$

3.14

$\overline{3.14}$

π

6. In an episode of "The Simpsons," Professor Frink addresses fellow scientists at a conference:

Prof. Frink: Scientists ... Scientists, please! I'm looking for some order. Some order, please, with the eyes forward and the hands neatly folded and the paying of attention. π is exactly three!

[crowd gasps]

Prof. Frink: Very sorry that it had to come to that, but now that I have your attention, we have some exciting new research from young Lisa Simpson. Let's bring her out and pay attention.

Explain why Professor Frink's statement is so alarming.

