LG 3/4 REAL NUMBERS WORKSHEET #1

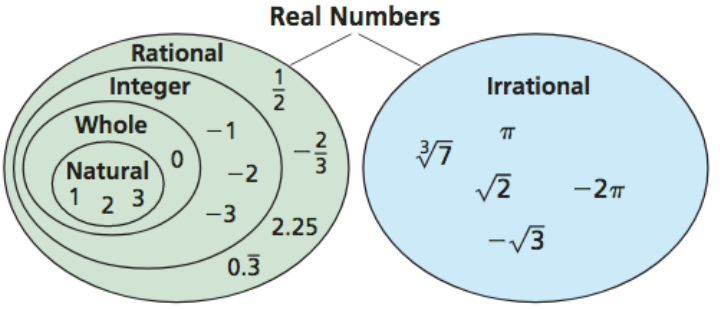
Name _____ Date _____

Classifying Real Numbers

A **rational number** is a number that can be written as the ratio of two integers. An **irrational number** cannot be written as the ratio of two integers.

- The square root of any whole number that is not a perfect square is irrational. The cube root of any integer that is not a perfect cube is irrational.
- The decimal form of an irrational number neither terminates nor repeats.

Rational numbers and irrational numbers together form the set of **real numbers**.



Example 1 **Classify each real number in as many ways as possible.**

	Number	Subset(s)	Reasoning
a.	$\sqrt{18}$		
b.	$0.\overline{33}$		
c.	$-\sqrt{4}$		
d.	$\frac{56}{7}$		
e.	$\sqrt[3]{5}$		

Practice

Classify the real number in as many ways as possible.

1. $\sqrt{17}$
2. $\frac{1}{5}$
3. 0.25
4. $\frac{48}{6}$
5. $-\sqrt{25}$
6. $\sqrt[3]{32}$

Determine whether the statement is *always*, *sometimes*, or *never* true. Explain your reasoning.

7. A natural number is a whole number.
8. An integer is a natural number.
9. A natural number is negative.
10. A real number is an irrational number.
11. A rational number is a real number.
12. A whole number is an irrational number.