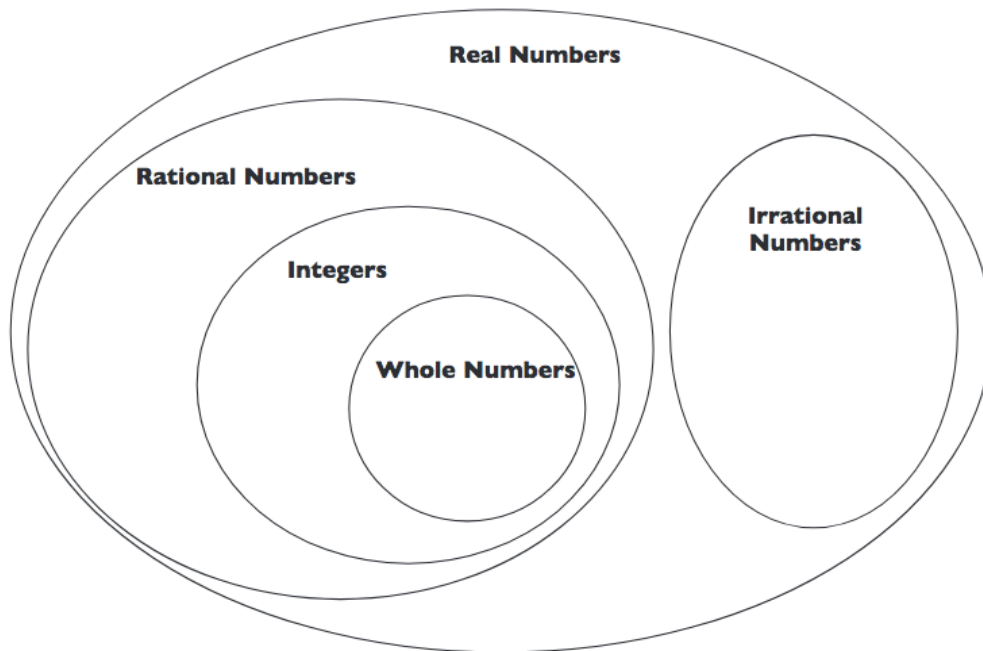# Classifying Real Numbers

Directions:

Write each number in the correct location on the Venn Diagram of the real number system. Each number should be written only once.

$$\left(-6, \ 2.73, \ \frac{3}{7}, \ \sqrt{2}, \ \sqrt{9}, \ -100, \ 0, \ \pi, \ 1, \ -\frac{1}{2}, \ -3.8, \ 5.\overline{42}, \ 8.293017... \right)$$

Real Numbers

Rational Numbers

Irrational Numbers

Integers

Whole Numbers

True or false? If false, explain why.

1) All whole numbers are integers.

2) All integers are whole numbers.

3) Some rational numbers are integers.

4) Some whole numbers are irrational numbers.

Understanding Real Numbers

1) List the numbers in the set $\left\{ \dfrac{4}{5}, \ -18, \ 0, \ \sqrt{5}, \ -\dfrac{1}{2}, \ -2.01, \ 5, \ \pi, \ 2.5\overline{13}, \ 5.1823159... \right\}$ that are:

Whole numbers

Integers

Rational numbers

Irrational numbers

Real numbers

2) Put a check mark for **each set** that the number is a part of:

	Whole Numbers	Integers	Rational Numbers	Irrational Numbers	Real Numbers
-7					
¾					
$\sqrt{2}$					
5					
0.398					

3) True or false? If false, explain why.

   a. All **integers** are **rational**.

   b. If a number is **rational**, then it must be a **whole number**.

   c. Some **irrational numbers** are **integers**.

   d. All **irrational numbers** are **real numbers**.

   e. No **whole numbers** are **integers**.