Rational and Irrational Numbers

Types of Decimals

1) Repeating
   ex) .23

2) Terminating (stops)
   ex) .5342

3) Nonrepeating, Nonterminating
   ex) $8 = 2.828427125...$

Types of Numbers

1. rational # - a # that can be written as a fraction

   Includes:

   Decimals
   and
   Decimals

   examples:
Can animals be plants just because they are both living things?

NO!

Question

Same as rational and irrational numbers.

They are NOT the same
Rational numbers: Repeating or Terminating Numbers (PATTERN keeps going or stops)

Irrational numbers: Non-repeating or Non-terminating Numbers (no pattern and NEVER stops)

\[ \pi = 3.14159265... \]
\[ \sqrt{2} \text{ or } \sqrt{\text{prime #}} \]
2. irrational # - a # that

examples:
Classifying #s

1. $\frac{7}{22}$
   - Rational
   - Irrational

2. $\frac{4}{5}$
   - Terminating
   - Repeating
   - Nonterminating, Nonrepeating

3. $\sqrt{2}$
   - Rational
   - Irrational
   - Terminating
   - Repeating
   - Nonterminating, Nonrepeating

3. $\frac{9}{20}$
   - Rational
   - Irrational

4. $\sqrt{13}$
   - Terminating
   - Repeating
   - Nonterminating, Nonrepeating

5. $\sqrt{9}$
   - Terminating
   - Repeating
   - Nonterminating, Nonrepeating
Comparing Numbers

1. $\sqrt{6}$ 3

2. 7 $\sqrt{49}$

3. $\sqrt{\frac{1}{9}}$ $\frac{1}{9}$

Real Number Target

Rational
Integers
Whole
Natural
Irrational

Created By: Crystal Clawson, Kristyn Heagen, and Lindsey Worthington
Rational and Irrational Numbers

The set of Real Numbers consists of both the rational and irrational numbers.

Real Number Target

Integers
Whole
Natural

Naturall Numbers

The positive counting numbers excluding zero
Whole Numbers

The positive counting numbers including zero

Integers

Positive and negative whole numbers including zero
**Rational Numbers**

Includes fractions, regular counting numbers, negative numbers, terminating decimals and repeating decimals.

\[\frac{26}{7}, \quad \frac{-2}{5}, \quad 3, \quad 0, \quad 8\frac{13}{99}\]

---

**Irrational Numbers**

An irrational number is a number whose decimal part goes on forever and ever without repeating.

\[e, \quad \sqrt{5}, \quad \sqrt{6}, \quad \pi\]
Move each number to the inner-most circle that it can be classified as a member of.

Real Number
Target
-2
36
23
\(-\frac{2}{5}\)
0
\(\pi\)

What title should be in each box?

- Use the eraser to reveal the answers.