Classifying & Comparing Rational & Irrational Numbers

$1, 2, 3, 4, 5, 6, 7, 8$
Natural

$0, 1, 2, 3, 4, 5, 6, 7$
Whole

$-4, -3, -2, -1, 0, 1, 2, 3$
Integers

Rational Numbers   **Irrational Numbers**
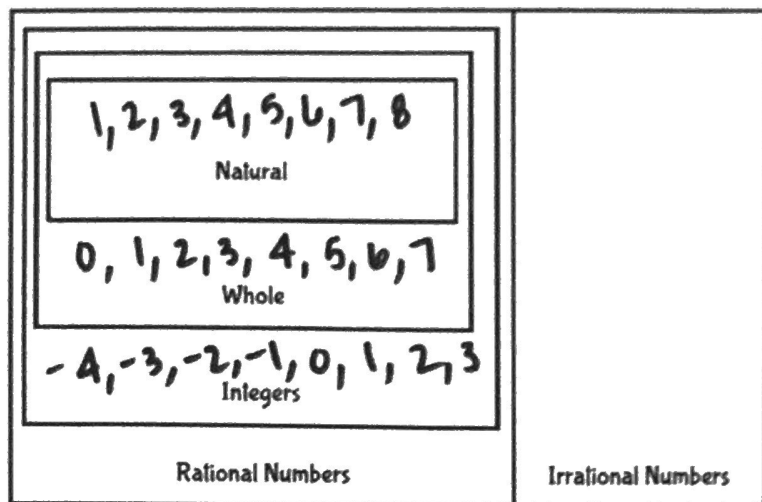
Real Numbers

Rational Numbers:
- Numbers that can be expressed as a **fraction** (Hint: Ratio)
- This set includes Natural Numbers, Whole Numbers, Integers, Fractions and **terminating** & **repeating** decimals.
  - **Terminating Decimal:** Decimal that ends (Ex. $\frac{3}{4} = 0.75$)
  - **Repeating Decimal:** Decimal that repeats indefinitely (Ex. $\frac{1}{3} = 0.3333$)

Examples: $\frac{2}{1}, \ -0.25, \ \frac{1}{3} (0.333), \ \sqrt{9} = 3$

Irrational Numbers:
- Numbers that **CANNOT be** expressed as a fraction of integers.
- This set includes numbers containing π , radicals (not including **perfect squares**) or a decimal that goes on **forever** (does not repeat).

Examples: $\sqrt{2} = 1.4142...$ $45.9492...$
$\pi = 3.1415...$