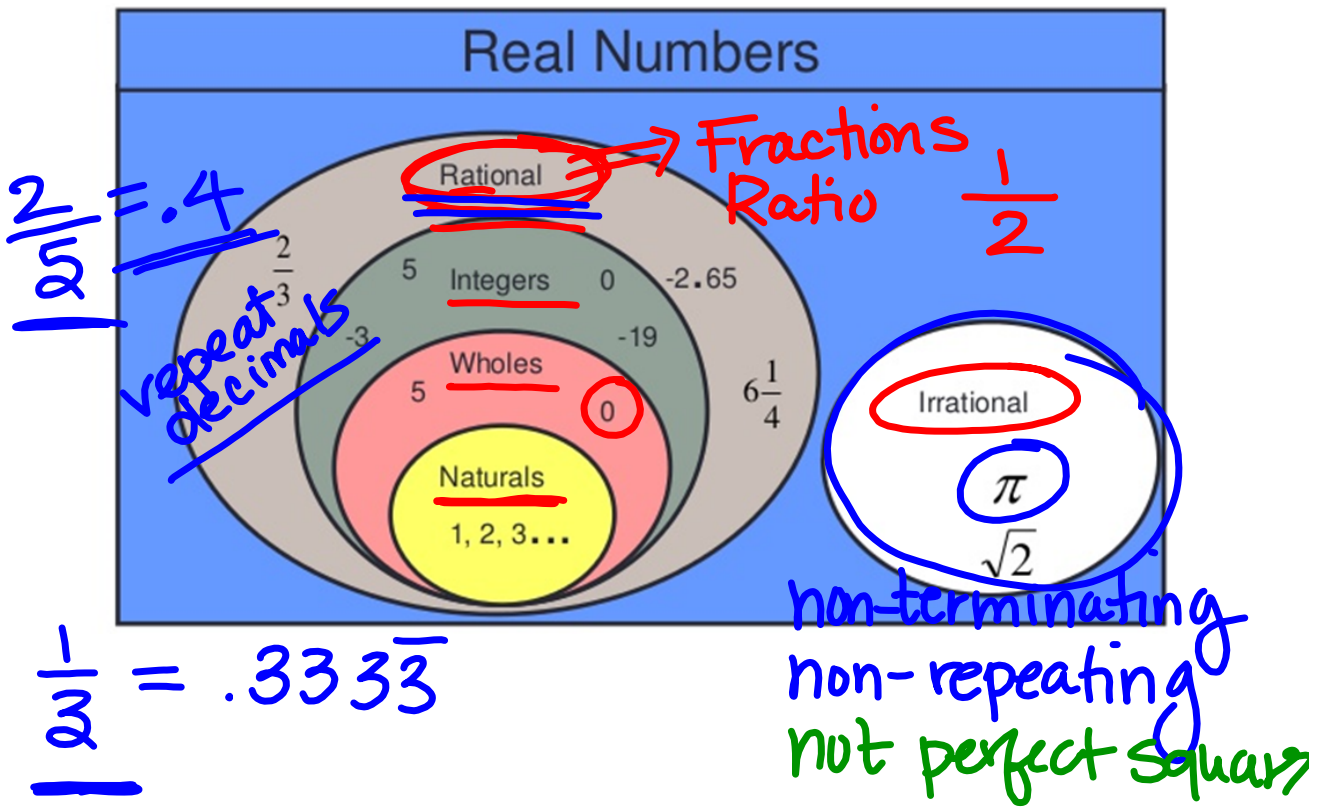


Rational and Irrational Operations



Number Classifications (from most general to most specific)

Real Numbers: a value that represents a quantity along a numberline.

- **Rational Numbers:** Numbers that can be expressed as a/b where a and b are integers. *Look like whole numbers, terminating decimals, or repeating decimals.* -

— **Integers:** positive and negative whole numbers and zero.

+ **Whole Numbers:** positive integers and zero.

* **Natural Numbers:** positive integers. Does not include zero.

- **Irrational Numbers:** Numbers that CANNOT be expressed as a/b where a and b are integers. *Look like non-terminating, non-repeating decimals.*

Imaginary Numbers: a value that cannot be represented along a numberline. Created by taking an even-root of a negative number like $\sqrt{-2}$.

Example	Decimal Equivalence	Rational or Irrational?	Specific Type
1) 4.57	4.57	Rational	terminating decimal
2) $-5/3$	$-1.6\overline{6}$	Rational	repeating decimal
3) $\sqrt{8}$	2.828.....	Irrational	Irrational ^{not a perfect sq}
4) $-\sqrt{9}$	-3.0	Rational	Perfect Sq.
5) 12	12.0	Rational	Whole #
6) $12/5$	2.4	Rational	terminating decimal
7) π	3.1415.....	Irrational	non-terminating non-repeating
8) $\sqrt{81}$	5.9 45.0	Rational	perfect sq.
9) $-4/7$	-0.5714285714	Rational	repeating decimal
10) $\sqrt{24}$	9.7979.....	Irrational	not perfect sq.
11) 0	0.0	Rational	Whole
12) $\sqrt[2]{3}$.86602.....	Irrational	non-terminating not per sq.