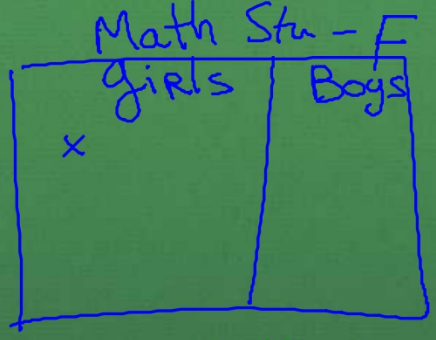
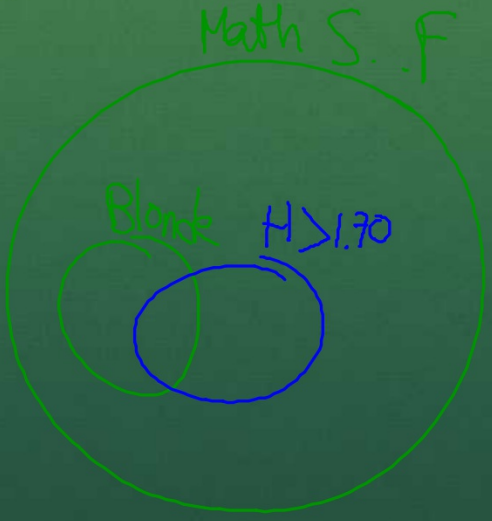
Review: Numbers

Make sure you learn it for next class……..

Venn Diagrams

Light review!!!!





Real Number Sets $\mathbb{R}$

$\mathbb{N}^*$ is just all (+) integers

- Natural Numbers $\mathbb{N}$ ⇒ all (+) integers + {0}

$\mathbb{N} = \{0, 1, 2, 3 \dots\}$

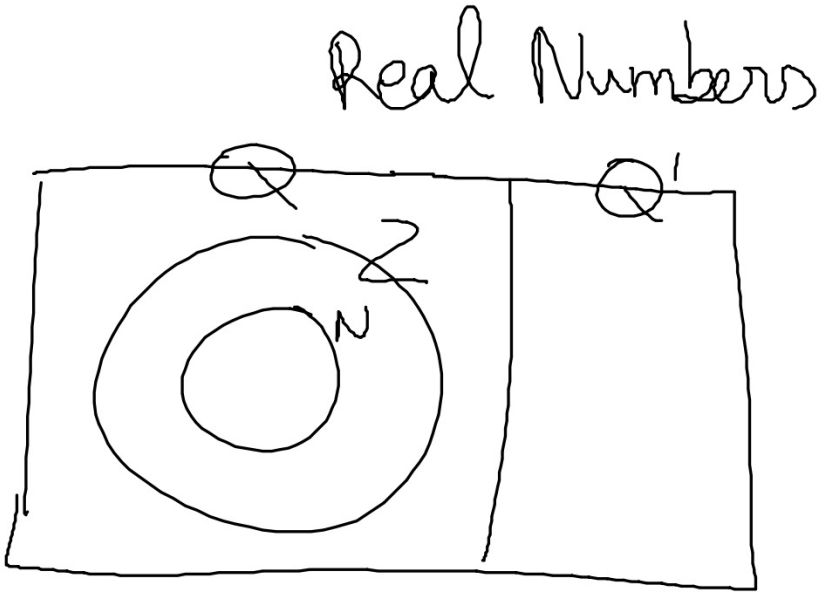
- Integers $\mathbb{Z}$ all integers ((+) and (−)) + {0}

$\mathbb{Z} = \{\dots -3, -2, -1, 0, 1, 2, 3 \dots\}$

- Rational $\frac{2}{3}; \frac{1}{2}, 1.25\left(\frac{5}{4}\right), -5.2\left(\frac{-26}{5}\right), 1.\overline{33}\left(\frac{4}{3}\right)$

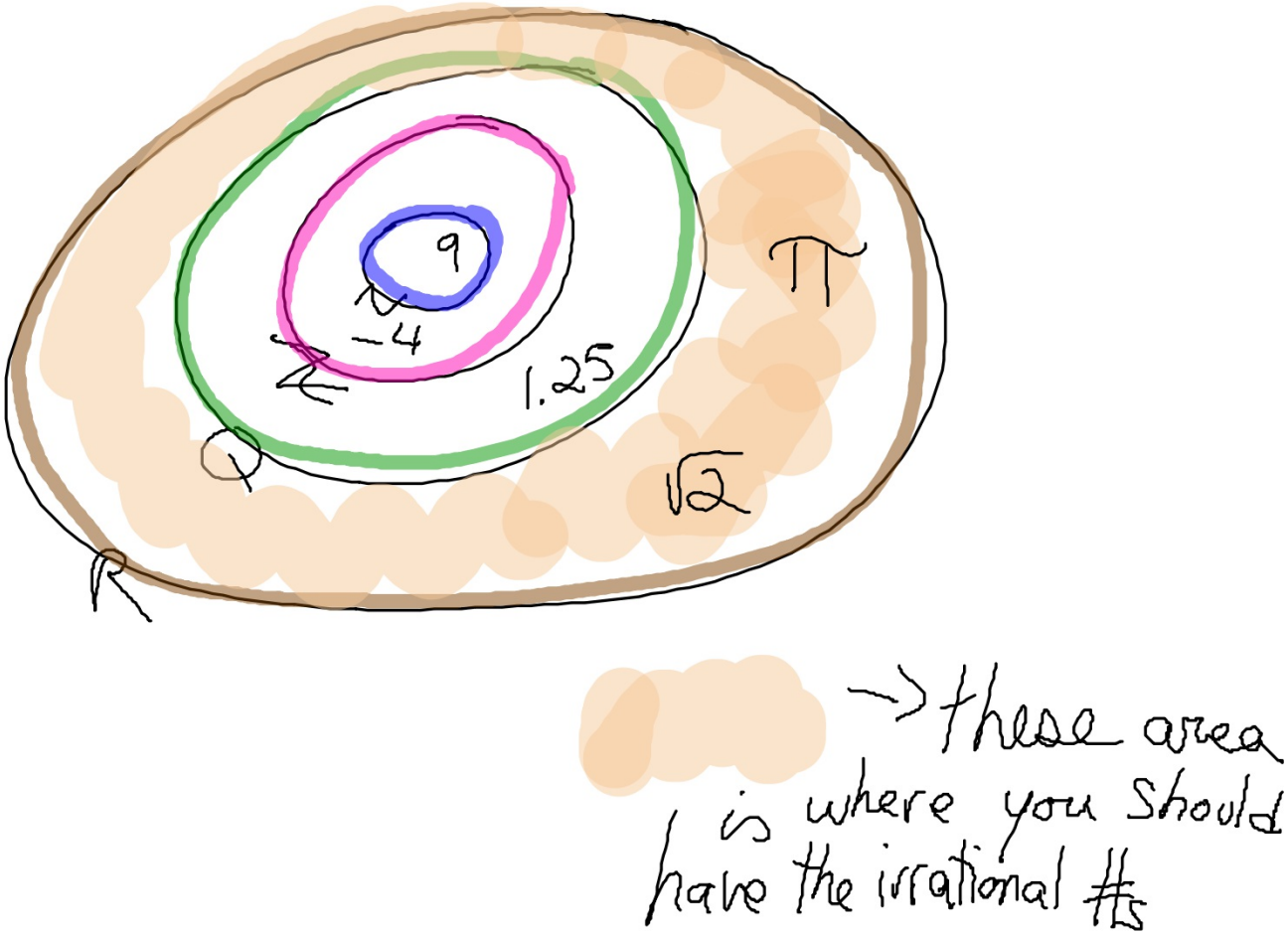
$\frac{a}{b}$ when $a \& b \in \mathbb{Z}$ and $b \neq 0$

- Irrational $\pi, \sqrt{2}, 1.1384\dots$



A quick note:
N*= all natural numbers except for {0}
Z* = all integers except for {0}
Z+ = all positive integers. So it does not include 0, neither negative integers}
Z- = all negative integers. So it does not include 0, neither positive integers.

This is how IB draws its Number Sets Venn Diagram.

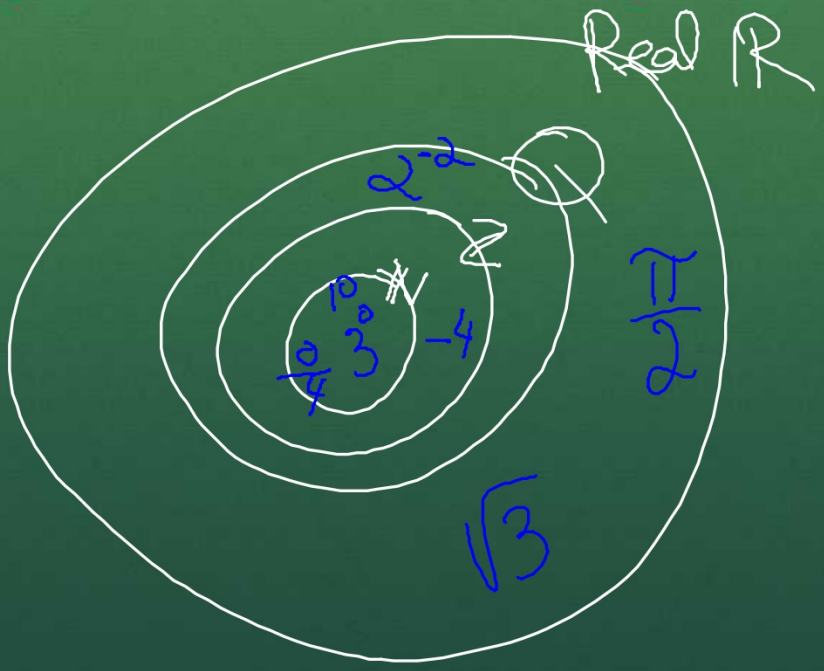


Example 1

	Natural N	Integers Z	Rational Q	Real R
10	✓	✓	✓	✓
$3^0 = 1$	✓	✓	✓	✓
$\frac{0}{4} = 0$	✓	✓	✓	✓
-4		✓	✓	✓
$2^{-2} = \frac{1}{4}$			✓	✓
$\frac{\pi}{2}$				✓
$\sqrt{3}$				✓

Example 2

- Draw the Venn Diagram of Real Numbers, and place in it the following numbers:



Example 3:

- Given the following numbers, state what kind of numbers they are.

$-4 \Rightarrow \mathbb{Z}, \mathbb{Q}, \mathbb{R}$

$3^{\circ} \Rightarrow \mathbb{N}, \mathbb{Z}, \mathbb{Q}, \mathbb{R}$

$10 \Rightarrow \mathbb{N}, \mathbb{Z}, \mathbb{Q}, \mathbb{R}$

$\frac{\pi}{2} \Rightarrow (\mathbb{Q}'), \mathbb{R}$

optional

$2^{-2} = \frac{1}{4} \Rightarrow \mathbb{Q}, \mathbb{R}$

$10 \Rightarrow \mathbb{N}, \mathbb{Z}, \mathbb{Q}, \mathbb{R}$