

1.1: Intro to Algebra and the set of

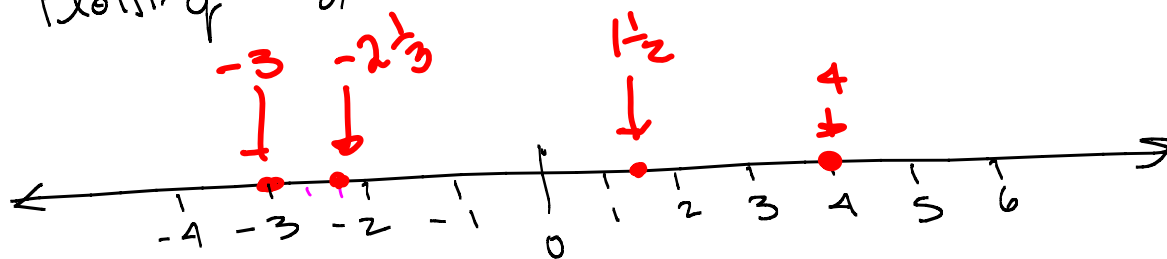
1.1.1

Note Title

8/27/2018

real numbers.

Plotting on a number line:



Example: Plot -3 , 4 , $1\frac{1}{2}$, $-\frac{7}{3}$

Change to a mixed number: $-\frac{7}{3} = -2\frac{1}{3}$

$$\begin{array}{r} 2 \\ 3 \overline{) 7} \\ \underline{6} \\ 1 \end{array}$$

Note: $-2\frac{1}{3} \neq -2.33$
 $-2\frac{1}{3} \approx -2.33$

$-2\frac{1}{3} = -2.\bar{3}$ $\approx$: approximately equal

$$-2.\bar{3} = -2.3333\dots$$

Note: $\frac{5}{4} = 1\frac{1}{4} = 1.25$

Two numbers are opposite if their sum is 0.

Ex: what is the opposite of -23 ? 23

what is the opposite of $\frac{8}{3}$? $-\frac{8}{3}$

Natural Numbers: 1, 2, 3, 4, 5, ...
(counting numbers)

1.1.2

Whole Numbers: 0, 1, 2, 3, 4, 5, ...

Integers: ..., -4, -3, -2, -1, 0, 1, 2, 3, ...

Rational Numbers: can be written as the ratio (fraction) of two integers.

Examples: $\frac{1}{2}$, $\frac{2}{3}$, $-\frac{4}{3}$, $\frac{7}{4}$, -3.65 , $2.\bar{3}$, 6

$5\frac{2}{5}$
 $\uparrow$
 $\frac{27}{5}$

$\uparrow$
 $-\frac{365}{100}$

$\uparrow$
 $2\frac{1}{3} = \frac{7}{3}$

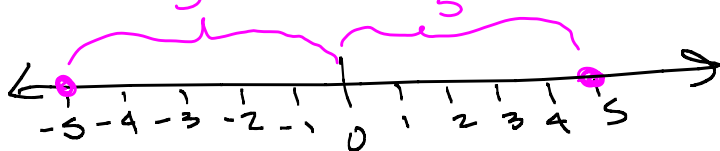
$\uparrow$
 $\frac{6}{1}$

Irrational Numbers: cannot write as the ratio of two integers.

Examples: π , $\sqrt{2}$, e

Absolute Value: Distance from 0 on number line

Also known as magnitude (magnitude = size)



Ex: $|5| = 5$
 $|-5| = 5$

Review/Reflect 1

RR1

Write down:

1 or 2 questions about the
course you still have.

What are you looking forward to
this semester?

After tonight, one or two questions/
concerns you still have.