

Think / Pair / Share  
i. (Triple) iii

i. Look up the following definitions

- Integers
- Natural Numbers
- The Real Numbers

ii. Form a group

iii. share your definitions!

# Lesson 1: Comparing Integers

## Definitions

### Integers $\mathbb{Z}$

→ whole #, not fractions, no decimal

→ positive, -, 0

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

curvy brackets for sets/groups of #.

### The Natural Number $\mathbb{N}$

• the positive  $\mathbb{Z}$

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

### The Real Numbers $\mathbb{R}$

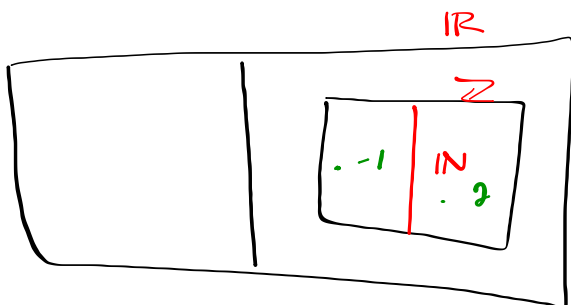
→ all numbers. whole, decimal anything

square bracket for intervals (smallest # to highest #)

$$\mathbb{R} = \{ \dots, -3.5, -2, -0.333, 0, 1, 2 \}$$

$$\mathbb{R} = ] -\infty, \infty [$$

ex age:  $[18, 30]$

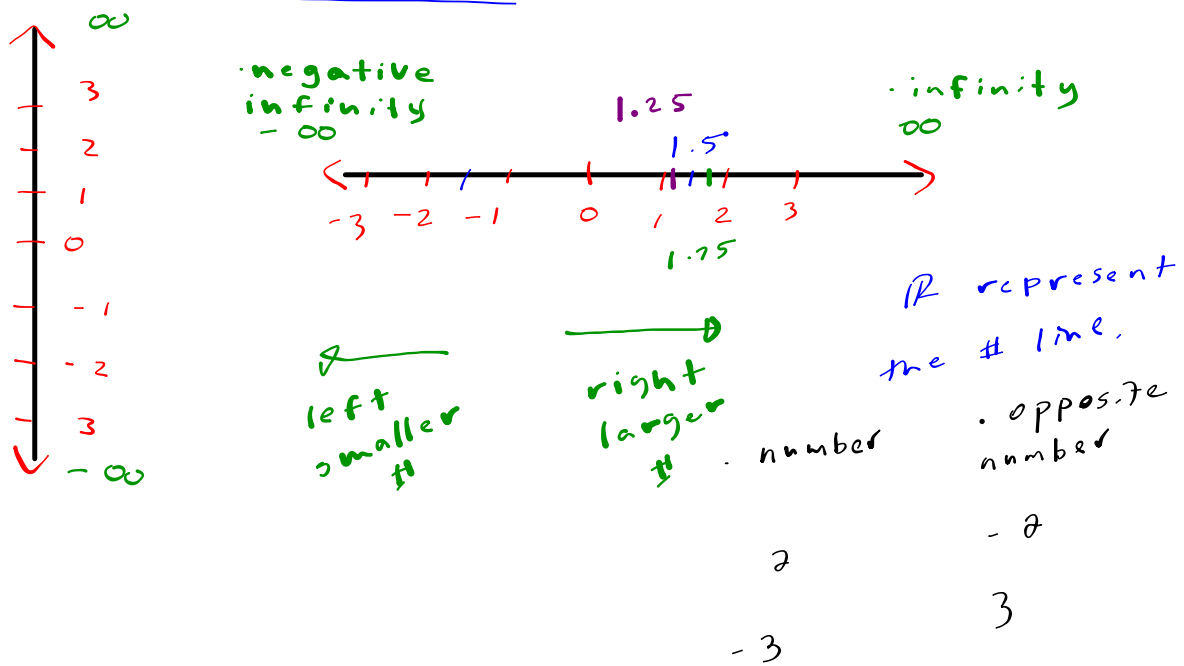


• belongs to  
 $-1 \in \mathbb{Z}$   
 $-1 \in \mathbb{R}$

• does not belong to  
 $-1 \notin \mathbb{N}$

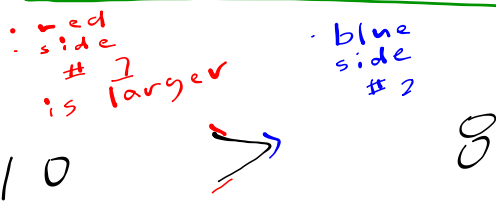
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The Number Line : A Visualization Tool



## Comparing Integers

### Read Comparing Symbols



10 is greater than 8

the larger/greater side points to the larger #.

$$f(x) = x^2, -2 < x < 4$$

$$-5 > -10$$

8 is less than 10

-5 is greater than -10

owe money  $\Rightarrow$  -  
\$50

makes sense, since -5 is more to the right

