

Sets of Numbers and Interval Notation
9/23/15

A ***Set*** is a collection of items called ***Elements***.

A ***Subset*** is a set whose elements belong in another set.

The ***Empty Set***, denoted \emptyset , is a set containing no elements.

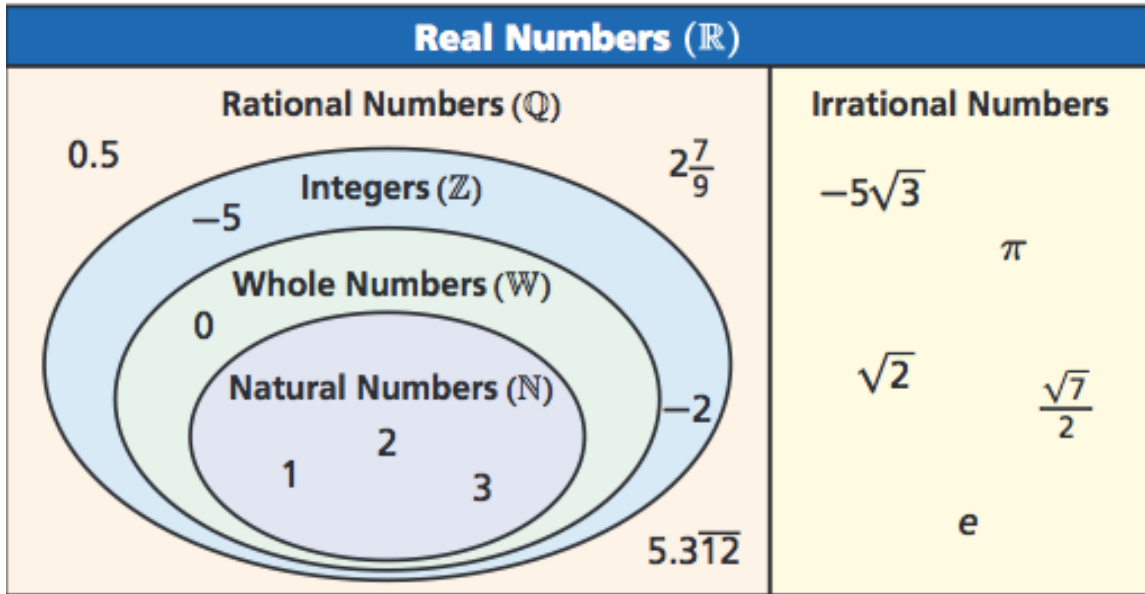
An example of a set could be all the students at Leland High School.

The elements would be the students.

A subset could be all the seniors at Leland High School.

A smaller subset would be seniors who are 17 years old.

#1 Create your own example of a set, elements, and subset.



Natural Numbers:

Whole Numbers:

Integers:

Rational Numbers:

Irrational Numbers:

Fill out the chart

Number	Real (R)	Rational (Q)	Integer (Z)	Whole (W)	Natural (N)	Irrational
$-\frac{5}{2}$						
0						
0.5129						
$0.\bar{6}$						
$\sqrt{2}$						

-5						
3						
-0.89						

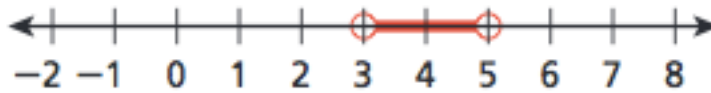
Roster Notation is a list of elements in a set between braces, { }.

Integers: $\{-2, -1, 0, 1, 2\}$

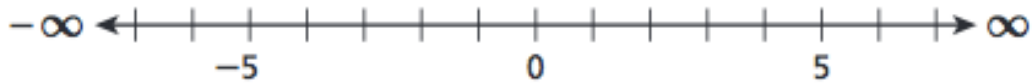
An ***Interval*** is a set of all numbers between two endpoints.

$$3 < x < 5$$

This shows the interval of numbers between 3 and 5, not including 3 or 5.



#3 How do you denote an interval to include the endpoints?



$-\infty$ denotes negative infinity and ∞ denotes positive infinity

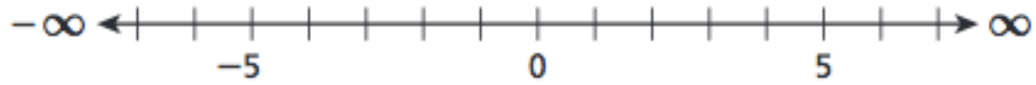
Interval Notation uses () to exclude endpoints and [] to include endpoints.

(3,5) can be written as $3 < x < 5$ or

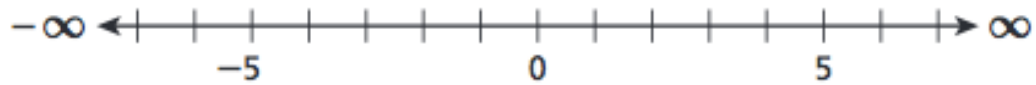


We Try:

#4 What two ways can $[-1,5)$ be shown as?

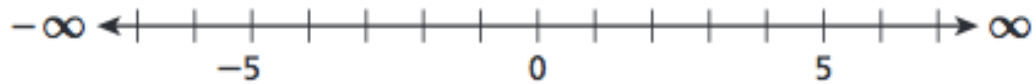


#5 What two ways can $-2 > x \geq -7$ be shown as?



You Try:

#6 What two ways can



be shown as?