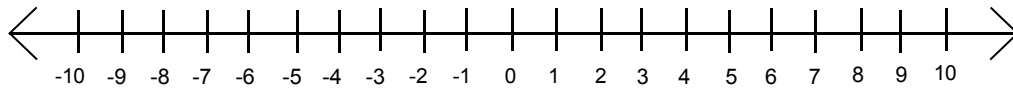


Chapter 9.3
Important sets of
numbers



Natural Numbers = { 1,2,3,4...}

Whole Numbers = {0,1,2,3,...}

Integers = {... -2,-1,0,1,2...}

Rational numbers =
everything else that can be
written in the form a/b where
 $b \neq 0$

In set building notation it is written as
 $R = \{a/b : a \text{ \& } b \text{ are integers and } b \neq 0\}$

Irrational Numbers

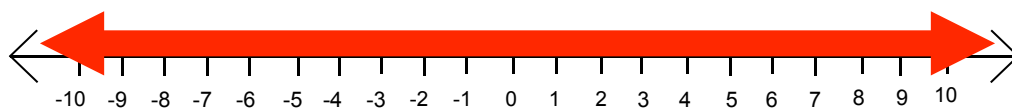
Numbers on a number line but not representable in a fraction.

$$\sqrt{2} \quad \sqrt{3} \quad 2\sqrt{3} \quad \pi$$

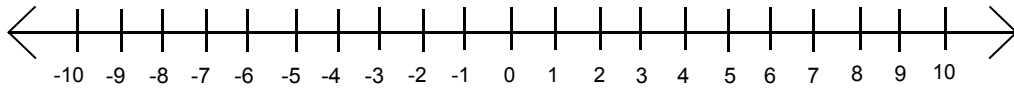
So
Rational #'s \cap irrational #'s

is the null set or empty
set. We say these are
disjoint sets.

So
Rational #'s \cup Irrational #'s
Are called real
numbers



Where is $\sqrt{5}$ on the number line?



Write $2.7777\dots$ as a fraction.

Let $n = 2.777\dots$ (multiply each side by 10)

Write $8.7575757\dots$ as a fraction.

Let $n = 8.75757\dots$ (multiply each side by 100)