

Date: _____

4.3 Set & Interval Notation**Set Notation:** A formal mathematical notation used to express a large group of numbers

Ex. $\{x|x \leq 10, x \in \mathbb{R}\}$

$\uparrow$ $\mathbb{R}$

"The set of x such that x is less than or equal to 10 where x is an element of the real numbers"

Ex. $\{y|y > 20, y \in \mathbb{I}\}$

$\uparrow$ Integers

$\{y|y > 20, y \in \mathbb{N}\}$

$\uparrow$ Natural #'s

$\{y|y > 20, y \in \mathbb{W}\}$

$\uparrow$ whole #'s

Ex. Write each given group of numbers in set notation:

a) All numbers equal to at least -3 .

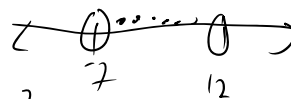
$$\{x|x \geq -3, x \in \mathbb{R}\}$$

b) 

$$\{x|x < 2, x \in \mathbb{R}\}$$

c) All integers from -7 to 12 exclusive

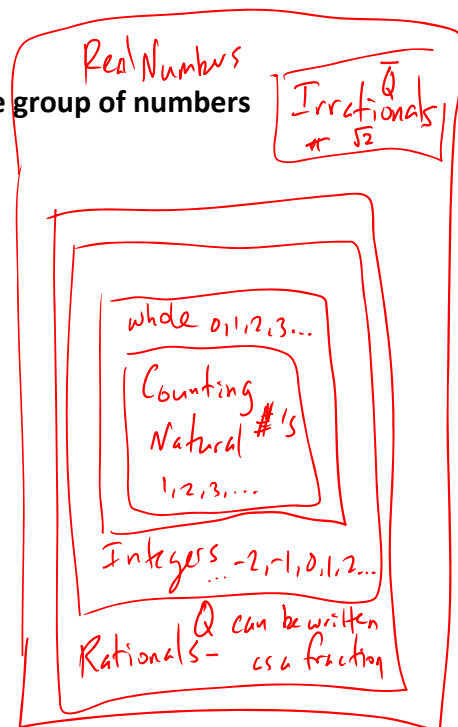
$$\{x|-7 < x < 12, x \in \mathbb{I}\}$$



OR $\{x|-6 \leq x \leq 11, x \in \mathbb{I}\}$

d) 

$$\{x|-5 \leq x < 42, x \in \mathbb{R}\}$$



Interval Notation:

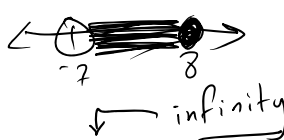
- Only used for continuous number data (ie. when included values are an element of the Reals)
- uses different brackets to indicate if an interval of values is inclusive or exclusive at the ends
[or] – End values are included
(or) – End values are excluded

Ex. Express each given interval as number lines:

a) $(-4, 10)$



c) $(-7, 8]$



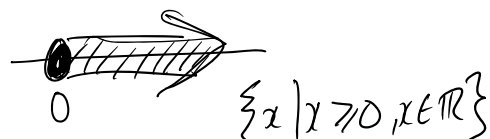
e) $(-\infty, -2)$



b) $[1, 15]$



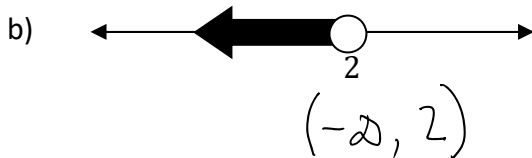
d) $[0, \infty)$



Ex. Write each given group of numbers in interval notation:

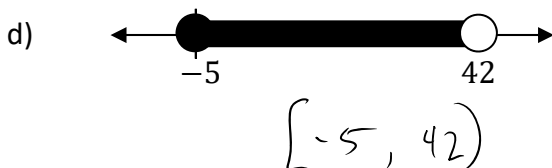
- a) All numbers equal to at least -3 .

$[-3, \infty)$



- c) All integers from -7 to 12 exclusive

No interval notation



Assignment: WS4.3 – work on sheet or separate