Unit 1

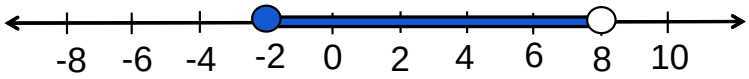
L4 Intervals

Brackets are very important in math and they mean different things. There are 3 types

Round:	P(0,5)	an ordered pair (x=0,y=5)	order is important so, it is not the same as (5,0)
Curly:	S= {0,5}	a set of 2 elements That is 0 & 5 ∈ S	order is not important so, it is the same as {5,0}
Square:	I= [0,5]	an Interval. That is all the real numbers from 0 to 5	same as saying $0 \leq x \leq 5$

1

Number Line



- Filled: the end number IS in the set
- Not filled/Empty: the end number IS NOT in the set
- Identifies the interval of numbers

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][nterval Notation (square brackets)

[-2, 8 [

Lowest # Highest #

[-5, 7] 

FACING/HUGGING brackets mean the end number is CONTAINED in the set.

]5, 9 [

BACK FACING brackets means the end number is NOT CONTAINED in the set.

3

Set builder Notation {Inequalities}

Review: fill in the correct sign so that x is

Less than 5 _____

Greater than 10 _____

At Most 22 _____

At Least 15 _____

We read the inequality from left to right.

$\{x \in R \mid -2 \leq x < 8\}$

x is a real # Lowest # Highest #

EFF RULE:
Equal sign
Filled circle
Facing bracket

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Bounded Intervals

Interval	Set-Builder	Number Line
[0,3]		
	$\{x \in R \mid -1 \leq x < 5\}$	
		
	$\{x \in R \mid a < x < b\}$	

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Unbounded Intervals

Interval	Set-Builder	Number Line
]-∞,3]		
	$\{x \in R \mid x \geq 3\}$	
		
	$\{x \in R \mid x < b\}$	

Practice: 3.3 # 1,2

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