SOLVING COMPOUND INEQUALITIES WITH INTERVAL NOTATION

What do we like to do? REVIEW! Write the following graphs in inequality and interval notation:

1. 

Inequality Notation: $x > -2$

Interval Notation: $(-2, \infty)$

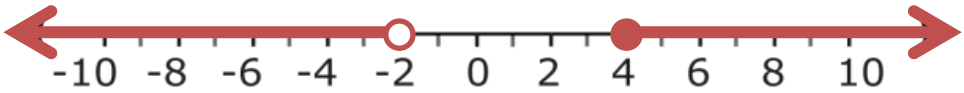
2. 

Inequality Notation: $x \leq 4$

Interval Notation: $(-\infty, 4]$

Think-Pair-Share: How would we write the interval notation for Compound Inequality Graphs? Is it an AND or OR graph?

Interval notation: $(-2, 4]$ AND or OR

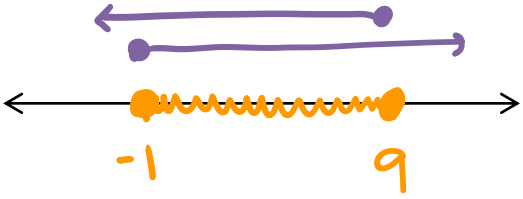


Interval notation: $(-\infty, -2) \cup [4, \infty)$ AND or OR

union when there is a break in the graph

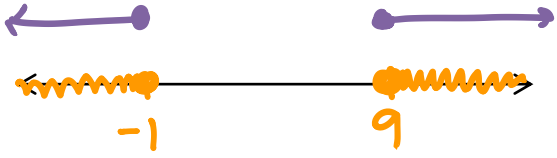
Putting it all together: Solve the compound inequality, graph, and write the answer in interval notation.

1. $-1 \leq x \leq 9$



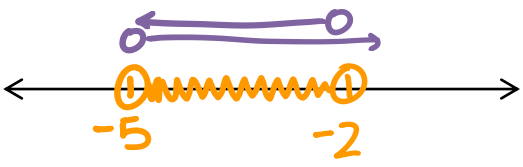
Interval Notation: $[-1, 9]$

2. $x \leq -1$ OR $x \geq 9$



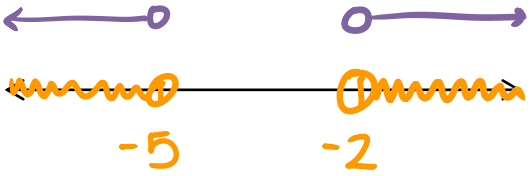
Interval Notation: $(-\infty, -1] \cup [9, \infty)$

3. $-5 < x < -2$



Interval Notation: $(-5, -2)$

4. $x < -5$ OR $x > -2$



Interval Notation: $(-\infty, -5) \cup (-2, \infty)$

Something new: Solving compound inequalities (AND problems).

1. $-10<2x<-4$

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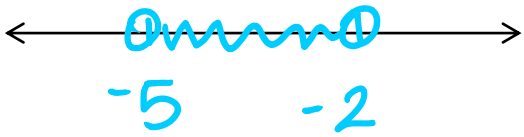
$-5<x<-2$

same as #3

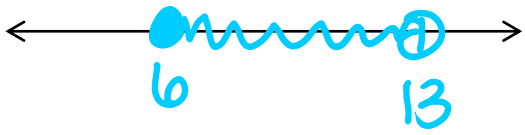


Interval Notation: $(-5\ -2)$

2. $9 \leq x + 3 < 16$

$-3\quad -3\quad -3$

$6 \leq x < 13$



Interval Notation $[6, 13)$

Magnet Time!