Unit 2 Day 20 Notes

SOLVING COMPOUND INEQUALITIES

Let's Take it Up a Notch! Solve for x and graph! Leave answer in interval notation.

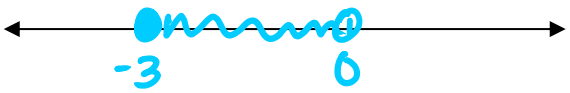
1. $10 \le 5(x+5) < 25$

$\frac{}{5} \quad \frac{}{5} \quad \frac{}{5}$

$2 \le x+5 < 5$

$-5 \quad -5 \quad -5$

$-3 \le x < 0$



Interval Notation: [-3, 0)

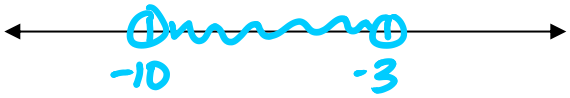
2. $-36 < 3(x-2) < -15$

$\frac{}{3} \quad \frac{}{3} \quad \frac{}{3}$

$-12 < x-2 < -5$

$+2 \quad +2 \quad +2$

$-10 < x < -3$



Interval Notation: (-10, -3)

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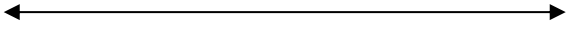
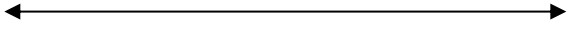


Interval Notation: _____



Interval Notation: _____

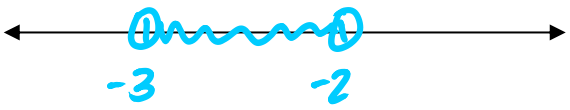
3. $6 < -3x < 9$

$\frac{}{-3}\ \frac{}{-3}\ \frac{}{-3}$ ← sign flips when you divide by negative

$-2 > x > -3$

or

$-3 < x < -2$



Interval Notation: (-3, -2)

SADMEP

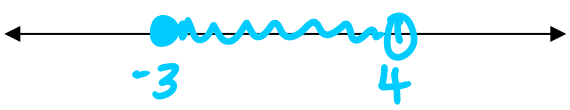
4. $-9 < -2x - 1 \leq 5$

$+1 \quad +1 \quad +1$

$\frac{-8}{-2} < \frac{-2x}{-2} \leq \frac{6}{-2}$ ← sign flips when ÷ by negative!

$4 > x \geq -3$

$-3 \leq x < 4$



Interval Notation: [-3, 4)

For 5-6, write the following statement as an inequality.

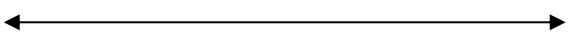
5. x is less than 2

$x < 2$

6. x is greater than 10 and less than 5

$10 < x < 5$

3. $6 < -3x < 9$



Interval Notation: _____

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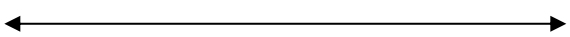

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