

Warm up

Solve and graph the compound inequality.

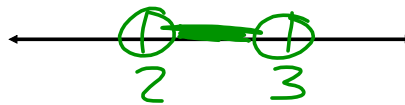
Week 3

$$1. \quad 7 < 6x - 5 < 13$$

$$\quad \quad \quad +5 \quad \quad +5 \quad +5$$

$$\frac{12}{6} < \frac{6x}{6} < \frac{18}{6}$$

$$2 < x < 3$$

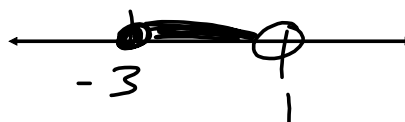


$$2. \quad -3 < -1 - 2x \leq 5$$

$$\begin{array}{r} +1 \quad | \quad +1 \quad | \quad +1 \\ -2 < -2x \leq 6 \\ \hline -2 \quad -2 \quad -2 \end{array}$$

$$1 > x \geq -3$$

$$-3 \leq x < 1$$



Homework Questions?

Self Scoring Scale

4- I can *summarize* the concepts and explain it to others.

3- I can *apply* the concepts to answer questions correctly.

2- I can *apply* the concepts but with some *mistakes*.

1- I *need help* to know how to apply the concepts.

0- I *can't* apply the concepts even with help.

6.3 Quiz

Was out of 28 pts

A- 25.5

B- 22.5

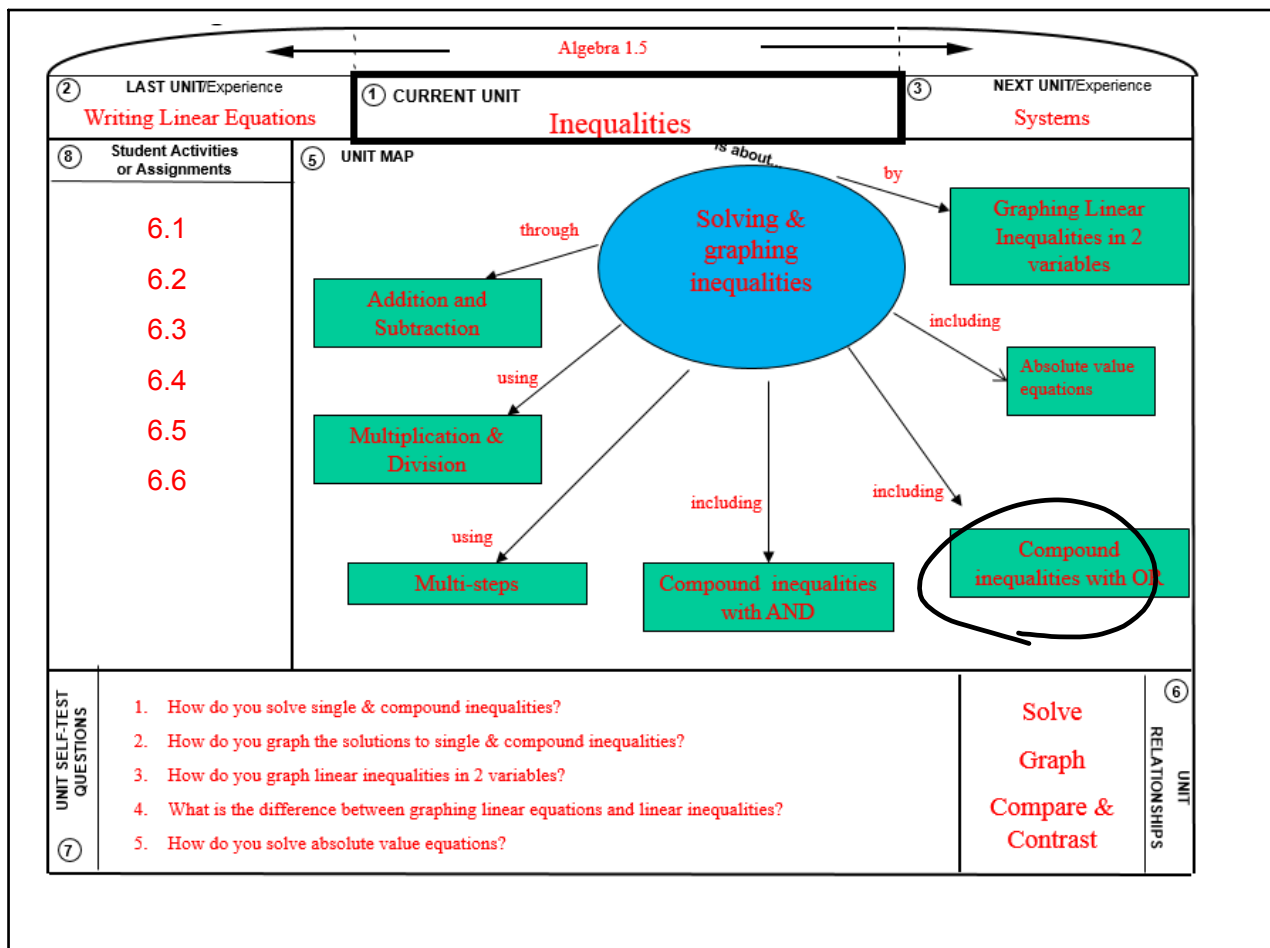
C- 20

D- 17

6.5 Solving Compound Inequalities Involving "Or"

Goals: • Solve and graph compound inequalities involving *or*.

EQ: What is the difference between an "AND" and an "OR" inequality?



Example 2: Solve a Compound Inequality With Or

Solve the compound inequality $x + 7 < 3$ or $4x \geq 8$.
Then graph the solution.

$$\begin{array}{l} x + 7 < 3 \\ -7 \quad -7 \\ \hline x < -4 \end{array} \quad \text{OR} \quad \begin{array}{l} 4x \geq 8 \\ \frac{4x}{4} \geq \frac{8}{4} \\ \hline x \geq 2 \end{array}$$



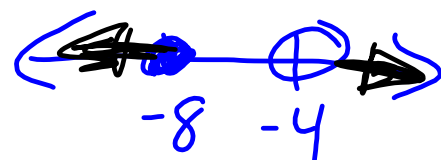
Try It Solve the inequality. Then graph the solution.

$$\begin{array}{l} 3. \quad x + 4 < -1 \quad \text{or} \quad 3x > 45 \\ -4 \quad -4 \quad \quad \quad \frac{3x}{3} \quad \frac{45}{3} \\ \hline x < -5 \quad \text{or} \quad x > 15 \end{array}$$

$$x < -5 \quad \text{OR} \quad x > 15$$



$$\begin{array}{l} 4. \quad \frac{x}{2} \leq -4 \quad \text{or} \quad x + 7 > 3 \\ \frac{x}{2} \leq -4 \quad \text{or} \quad x > -4 \\ \hline x \leq -8 \quad \text{or} \quad x > -4 \end{array}$$



Example 3: Solve a Multi-Step Compound Inequality

Solve the compound inequality $2 - 5x \leq -3$ or $-4x - 3 \geq 17$.
Then graph the solution.

$$\begin{array}{l}
 2 - 5x \leq -3 \quad \text{OR} \quad -4x - 3 \geq 17 \\
 \begin{array}{r}
 -2 \quad -2 \\
 \hline
 -5x \leq -5 \\
 \hline
 -5 \quad -5 \\
 \hline
 x \geq 1
 \end{array}
 \end{array}$$

$$\begin{array}{l}
 -4x - 3 \geq 17 \\
 \begin{array}{r}
 +3 \quad +3 \\
 \hline
 -4x \geq 20 \\
 \hline
 -4 \quad -4 \\
 \hline
 x \leq -5
 \end{array}
 \end{array}$$

OR

Try It Solve the inequality. Then graph the solution.

5. $3x - 6 \leq -12$ or $2x + 2 > 10$

$$\begin{array}{l}
 \begin{array}{r}
 +6 \quad +6 \\
 \hline
 3x \leq -6 \\
 \hline
 3 \quad 3 \\
 \hline
 x \leq -2
 \end{array}
 \end{array}$$

$$\begin{array}{l}
 \begin{array}{r}
 -2 \quad -2 \\
 \hline
 2x > 8 \\
 \hline
 2 \quad 2 \\
 \hline
 x > 4
 \end{array}
 \end{array}$$

OR

6. $-9x - 5 > 13$ or $2x - 1 \geq 3$

$$\begin{array}{l}
 \begin{array}{r}
 +5 \quad +5 \\
 \hline
 -9x > 18 \\
 \hline
 -9 \quad -9 \\
 \hline
 x < -2
 \end{array}
 \end{array}$$

$$\begin{array}{l}
 \begin{array}{r}
 +1 \quad +1 \\
 \hline
 2x \geq 4 \\
 \hline
 2 \quad 2 \\
 \hline
 x \geq 2
 \end{array}
 \end{array}$$

OR

$x < -2$ OR $x \geq 2$

Summary

EQ: What is the difference between an "AND" and an "OR" inequality?

↳ overlaps
(when graphing) ↳ goes opposite

6.5 Homework

6.5 p.351 #2-5, 9, 10, 14-20,

21-28, 33-40, 47, 64-72 even

optional