

T-A1 Algebra 1 Week 15

3-4 Solving Multi-step Inequalities

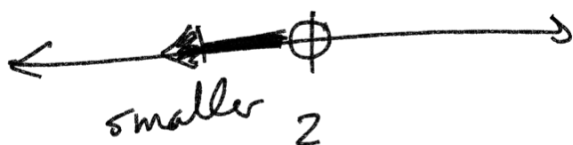
$$4x + 3 < 11$$

-3 -3

$$\frac{4x}{4} < \frac{8}{4}$$

$$x < 2$$

smaller bigger



$$4x + 3 = 11$$

-3 -3

$$\frac{4x}{4} = \frac{8}{4}$$

$$x = 2$$

$$3x + 2 = 2x + 5$$

$$3x + 2 < 2x + 5$$

-2x -2x

$$x + 2 < 5$$

-2 -2

$$x < 3$$



$$3x + 8 < 3x + 2$$

-3x -3x

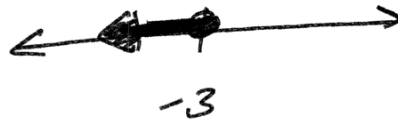
$$8 < 2$$

false
no solution

$$\begin{array}{r} -4x + 5 \geq 17 \\ -5 \quad -5 \end{array}$$

$$\begin{array}{r} -4x \geq 12 \\ \textcircled{-4} \quad \textcircled{-4} \\ \text{flip} \\ x \leq -3 \end{array}$$

$$\begin{array}{r} -4x + 5 = 17 \\ -5 \quad -5 \end{array}$$



$$\begin{array}{r} 2z + 7 < z + 10 \\ -7 \quad -7 \end{array}$$

$$\begin{array}{r} 2z < z + 3 \\ -z \quad -z \end{array}$$

$$\boxed{z < 3}$$

$$4(k-1) > 4$$

$$\begin{array}{r} 4k - 4 > 4 \\ +4 \quad +4 \end{array}$$

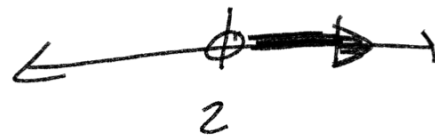
$$\frac{4k}{4} > \frac{8}{4}$$

$$k > 2$$

$$\frac{4(k-1)}{4} > \frac{4}{4}$$

$$\begin{array}{r} k-1 > 1 \\ +1 \quad +1 \end{array}$$

$$k > 2$$



$$h + 2(3h + 4) \geq 1$$

$$h + 6h + 8 \geq 1$$

$$\begin{array}{r} 7h + 8 \geq 1 \\ -8 \quad -8 \end{array}$$

$$7h \geq -7$$

$$\textcircled{7} \quad \textcircled{7}$$

$$\boxed{h} \geq -1$$



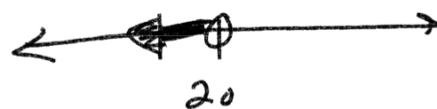
$$\boxed{6u} - 18 - \boxed{4u} < 22$$

$$\begin{array}{r} 2u - 18 = 22 \\ +18 \quad +18 \end{array}$$

$$\begin{array}{r} 2u - 18 < 22 \\ +18 \quad +18 \end{array}$$

$$\frac{2u}{2} < \frac{40}{2}$$

$$u < 20$$



3-5 Compound Inequalities

$$\begin{array}{r}
 -3 \leq x - 5 \\
 +5 \quad +5 \\
 \hline
 2 \leq x
 \end{array}
 \quad \text{or} \quad
 \begin{array}{r}
 x + 5 \leq 2 \\
 -5 \quad -5 \\
 \hline
 x \leq -3
 \end{array}$$

"or" means divergent



$$\begin{array}{r}
 x - 2 \geq -6 \\
 +2 \quad +2 \\
 \hline
 x \geq -4
 \end{array}
 \quad \text{and} \quad
 \begin{array}{r}
 5 + x < 7 \\
 -5 \quad -5 \\
 \hline
 x < 2
 \end{array}$$

"and" convergent



$$\begin{array}{r}
 -3 \leq x + 1 < 3 \\
 -1 \quad -1 \quad -1 \\
 \hline
 -4 \leq x < 2
 \end{array}$$

$$\begin{array}{r}
 -3 \leq x + 1 \\
 -1 \quad -1 \\
 \hline
 -4 \leq x
 \end{array}$$

$$\begin{array}{r}
 x + 1 < 3 \\
 -1 \quad -1 \\
 \hline
 x < 2
 \end{array}$$

$$\boxed{-4 \leq x} < 2$$

$$\boxed{-4 \leq x}$$

$$\boxed{x} < 2$$



HW
ch 3.4 evens
ch 3.5 pg 41 2-12 evens

Supplemental WS (3.4)
3.4 Online HW 15
Quiz 15
HW/quiz 13 due tonight
No HW/quiz 14

Jan 26th