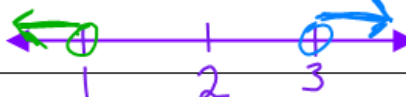
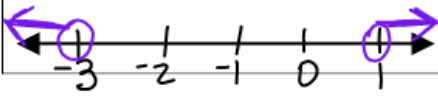

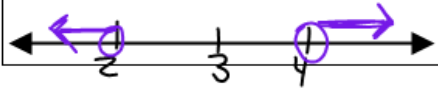
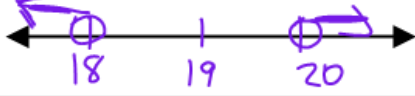


# Compound Inequalities

<i>compound inequality</i>	Decode
Definition an inequality joined by the words "and" or "or"	Example $x > 3$ or $x < 1$ 

## Example 1: Solving and Graphing Compound Inequalities

Solve and graph each of the "or" compound inequalities.

I Do	We Do
$3x + 2 < -7$ or $-4x + 5 < 1$ $\begin{array}{r} 3x + 2 < -7 \\ -2 \quad -2 \\ \hline 3x < -9 \\ \div 3 \\ x < -3 \end{array}$ or $\begin{array}{r} -4x + 5 < 1 \\ -5 \quad -5 \\ \hline -4x < -4 \\ \div -4 \\ x > 1 \end{array}$ 	$-2x + 7 > 3$ or $3x - 4 \geq 5$ $\begin{array}{r} -2x + 7 > 3 \\ -7 \quad -7 \\ \hline -2x > -4 \\ \div -2 \\ x < 2 \end{array}$ or $\begin{array}{r} 3x - 4 \geq 5 \\ +4 \quad +4 \\ \hline 3x \geq 9 \\ \div 3 \\ x \geq 3 \end{array}$ 
We Do	You Do
$k - 3 > 1$ or $k - 3 < -1$ $\begin{array}{r} k - 3 > 1 \\ +3 \quad +3 \\ \hline k > 4 \end{array}$ or $\begin{array}{r} k - 3 < -1 \\ +3 \quad +3 \\ \hline k < 2 \end{array}$ 	$b - 2 > 18$ or $3b < 54 \div 3$ $\begin{array}{r} b - 2 > 18 \\ +2 \quad +2 \\ \hline b > 20 \end{array}$ or $b < 18$ 

## Compound Inequalities

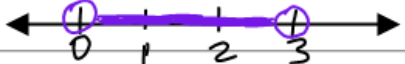
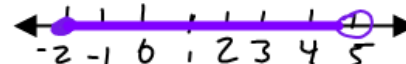
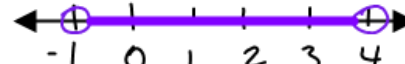

You Do	You Do
$3f > 15$ or $2f < -4$	$7 + 2a > 9$ or $-4a > 8$

We Do	We Do
$h + 2.8 < 1.8$ or $h + 2.8 > 4.8$	$2z > 2.1$ or $3z < -5.85$

# Compound Inequalities

## Example 2: Solving and Graphing Compound Inequalities

Solve and graph each of the “and” compound inequalities.

I Do	I Do
$5 > 5 - f > 2$ $5 > \cancel{5} - f \text{ and } \cancel{5} - f > 2$ $\begin{array}{l} -5 \quad -5 \\ 0 > -f \quad -f > -3 \\ \frac{0}{-1} \quad \frac{-f}{-1} \end{array}$ $0 < f \text{ and } f < 3$ 	$\frac{-6}{3} \leq \frac{3x}{3} < \frac{15}{3}$ $-2 \leq x < 5$ 
We Do	We Do
$\begin{array}{l} -3 < 2x < 7 \\ +1 \quad +1 \\ -2 < x < \frac{8}{2} \\ -1 < x < 4 \end{array}$ 	$\begin{array}{l} 4d > 8 \text{ and } 2d > -6 \\ \frac{4d}{4} > \frac{8}{4} \text{ and } \frac{2d}{2} > \frac{-6}{2} \\ d < 2 \text{ and } d > -3 \\ -2 > d \text{ and } d > -3 \\ -2 > d > -3 \end{array}$ 

## Compound Inequalities

You Do	You Do
$-1 < \frac{1}{2}x < 1$	$-6 < 9 + 3y < 6$

You Do	You Do
$1 > 2h + 3 > -1$	$-3 \leq \frac{3}{2}x + 6 \leq 3$