

Lets solve and graph a few...

1. $x + 2 > 12$ and $x + 2 \leq 18$

2. $3 < 2x - 3 < 15$

3. $-2 \leq 5x + 8 \leq 18$

4. $2x - 2 \leq 4x - 8 \leq 3x - 3$

$$\begin{array}{r}
 2x - 2 \leq 4x - 8 \quad \& \quad 4x - 8 \leq 3x - 3 \\
 \hline
 -4x \quad \quad -4x \\
 \hline
 -2x - 2 \leq -8 \\
 \hline
 +2 \quad \quad +2 \\
 \hline
 -2x \leq -6 \\
 \hline
 -2 \quad \quad -2 \\
 \hline
 x \geq 3
 \end{array}$$

$$\begin{array}{r}
 4x - 8 \leq 3x - 3 \\
 \hline
 -3x \quad \quad -3x \\
 \hline
 x - 8 \leq -3 \\
 \hline
 +8 \quad \quad +8 \\
 \hline
 x \leq 5
 \end{array}$$

$$3 \leq x \leq 5$$



5. $2x - 5 < 6x + 7 < 3 + 2x$

$$\begin{array}{r}
 2x - 5 < 6x + 7 \quad \& \quad 6x + 7 < 3 + 2x \\
 \hline
 -2x \quad \quad -2x \\
 \hline
 -5 < 4x + 7 \\
 \hline
 -7 \quad \quad -7 \\
 \hline
 -12 < 4x \\
 \hline
 \frac{-12}{4} < \frac{4x}{4} \\
 \hline
 -3 < x
 \end{array}$$

$$\begin{array}{r}
 6x + 7 < 3 + 2x \\
 \hline
 -2x \quad \quad -2x \\
 \hline
 4x + 7 < 3 \\
 \hline
 -7 \quad \quad -7 \\
 \hline
 4x < -4 \\
 \hline
 \frac{4x}{4} < \frac{-4}{4} \\
 \hline
 x < -1
 \end{array}$$

$$-3 < x < -1$$

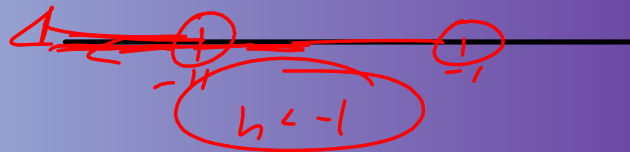
The OR problems

$$1. \quad \begin{array}{l} d - 4 > 3 \text{ or } d - 4 \leq 1 \\ \hline +4 \quad +4 \qquad \quad +4 \quad +4 \\ \hline d > 7 \text{ or } d \leq 5 \end{array}$$

$$d \leq 5 \text{ or } d > 7$$

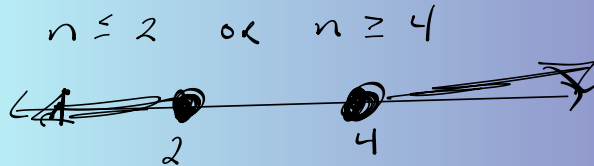


$$2. \quad \begin{array}{l} h - 10 < -21 \text{ or } h + 3 < 2 \\ \hline +10 \quad +10 \qquad \quad -3 \quad -3 \\ \hline h < -11 \text{ or } h < -1 \end{array}$$



$$3. \quad \begin{array}{l} 3n + 11 \leq 17 \text{ or } -3n \leq -12 \\ \hline -11 \quad -11 \qquad \quad -3 \quad -3 \\ \hline 3n \leq 6 \qquad \qquad \downarrow \\ \frac{3n}{3} \leq \frac{6}{3} \end{array}$$

$$n \leq 2 \text{ or } n \geq 4$$



$$4. \quad 4c < 2c - 10 \text{ or } -3c < -12$$