

SMART START

Solve each compound inequality and graph the solution set

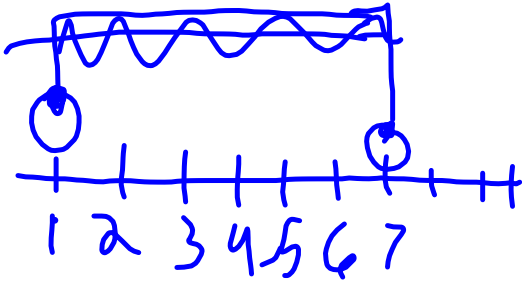
1) $-4 < 2t - 6 < 8$

$$\begin{array}{r} 6 \quad \cdot \quad 6 \quad 6 \\ 2 < 2t < 14 \\ \hline 2 \quad \quad \quad 2 \\ 1 < t < 7 \end{array}$$



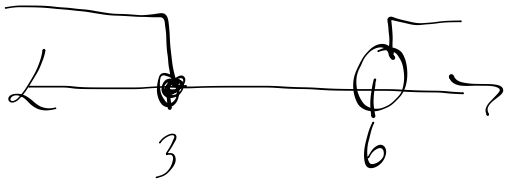
$-4 < 2t - 6$?

$2t - 6 < 8$



2) $3x + 2 \leq 11$ or $5x - 8 > 22$

$$\begin{array}{r} 2 \cdot 2 \quad \quad \quad 8 \quad 8 \\ 3x \leq 9 \quad \quad \quad 5x > 30 \\ \hline 3 \quad \quad \quad 3 \quad \quad \quad 5 \quad 5 \\ x \leq 3 \quad \text{or} \quad x > 6 \end{array}$$



Solve each equation by factoring.

$$1) 2p^2 + 7p + 5 = 2$$

$$2p^2 + 7p + 3 = 0$$

$$\frac{2p^2 + 6p}{2p \quad 2p} + \frac{1p + 3}{+1 \quad +1} = 0$$

$$2p(p+3) + 1(p+3) = 0$$

$$(2p+1)(p+3) = 0$$

$$2p+1=0 \quad p+3=0$$

$$2p = -1 \quad p = -3$$

$$p = -\frac{1}{2}$$

$$2p^2 + 7p + 3 = 0$$

$$p^2 + 7p + 6 = 0 \quad \frac{6}{1 \quad 6}$$

$$(p+1)(p+6) = 0$$

$$(p+\frac{1}{2})(p+3) = 0$$

$$(2p+1)(p+3) = 0$$

$$p = -\frac{1}{2} \quad p = -3$$

TRICKY



38)

$$\begin{array}{r}
 30 \\
 -6 \overline{) -5} \\
 17x^2 - 11x + 2 = 2x^2 \\
 -2x^2 \qquad \qquad -2x^2 \\
 \hline
 \end{array}$$

$$15x^2 - 11x + 2 = 0$$

$$\left(x - \frac{6}{15}\right) \left(x - \frac{5}{15}\right) = 0$$

$$\left(x - \frac{2}{5}\right) \left(x - \frac{1}{3}\right) = 0$$

$$\frac{2}{5} \quad \frac{1}{3}$$

$$42) \quad 21x^2 - 6 = 15x$$

$$\qquad \quad -15x \quad -15x$$

$$21x^2 - 15x - 6 = 0$$

$$x^2 - 15x - 126 = 0 \quad \begin{array}{r} -126 \\ 6 \overline{) 21} \end{array}$$

$$\left(x + \frac{6}{21}\right) \left(x - \frac{21}{21}\right) = 0$$

$$\left(x + \frac{2}{7}\right) (x - 1) = 0$$

$$x = -\frac{2}{7} \quad | \quad 1$$

$$44) \quad 24x^2 - 46x = 18$$

-18 -18

$$24x^2 - 46x - 18 = 0$$

$$\cancel{2} \frac{(12x^2 - 23x - 9)}{\cancel{2}} = \frac{0}{\cancel{2}}$$

$$12x^2 - 23x - 9 = 0$$

$$x^2 - 23x - 108 = 0$$

$$\frac{-108}{4 \mid 27}$$

$$\left(x + \frac{4}{12}\right) \left(x - \frac{27}{12}\right) = 0$$

$$\left(x + \frac{1}{3}\right) \left(x - \frac{9}{4}\right) = 0$$

$$x = -\frac{1}{3} \quad \vee \quad \frac{9}{4}$$