

Algebra IIa

2-4 Day 1

Solving Linear Equations

Solve. Graph each equation using interval notation.

34) $6 - 2(x - 4) \leq 2x + 10$

$$6 - 2x + 8 \leq 2x + 10$$

$$\begin{array}{r} -2x + 14 \leq 2x + 10 \\ +2x - 10 \quad +2x - 10 \end{array}$$

$$\frac{4}{4} \leq \frac{4x}{4}$$

$$1 \leq x$$

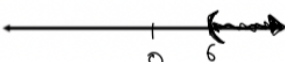
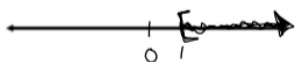
44) $3x - 2(3x - 5) > 2 - 5(x - 4)$

$$3x - 6x + 10 > 2 - 5x + 20$$

$$\begin{array}{r} -3x + 10 > -5x + 22 \\ +5x - 10 \quad +5x - 10 \end{array}$$

$$\frac{2x}{2} > \frac{12}{2}$$

$$x > 6$$



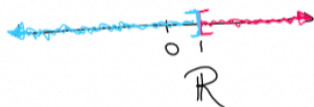
Conjunction - and (says or and two inequalities) overlap required

Disjunction - or (has to say or) doesn't care about overlap.

Solve. Graph each equation using interval notation.

48) $x + 4 \geq 5$ or $3x \leq 3$

$$*x \geq 1 \text{ or } *x \leq 1$$



62) $-5 < 3x + 4 \leq 16$

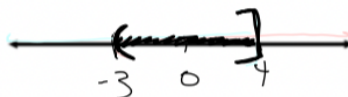
$$\begin{array}{r} -5 < 3x + 4 \text{ and } 3x + 4 \leq 16 \\ -4 \quad -4 \quad -4 \quad -4 \end{array}$$

$$\frac{-9}{3} < \frac{3x}{3}$$

$$\frac{3x}{3} \leq \frac{12}{3}$$

$$*-3 < x \text{ and } *x \leq 4$$

needs overlap



76) $3x - 2 > 7$ and $5x + 2 > -18$

$$\begin{array}{r} +2 \quad +2 \\ 3x - 2 > 7 \end{array}$$

$$\frac{3x}{3} > \frac{9}{3}$$

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

$$\frac{5x}{5} > \frac{-20}{5}$$

$$*x > 3 \text{ and } *x > -4$$

overlap

