

5-4 Solving Compound Inequalities

and - Intersection

- only true if both are true
- where the two graphs overlap

$$3 \leq x < 7$$



$$-2 \leq x - 3 < 4$$

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

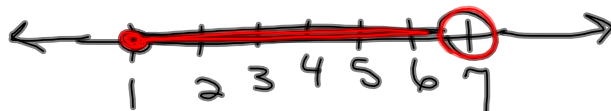
$$1 \leq x$$

$$\boxed{x \geq 1}$$

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

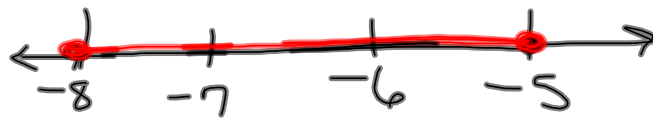
$$\boxed{x < 7}$$

$$1 \leq x < 7$$



$$(A) \quad y - 3 \geq -11 \quad \text{and} \quad y - 3 \leq -8$$

$$y \geq -8 \quad \text{and} \quad y \leq -5$$



$$(B) \quad 6 \leq r + 7 < 10$$

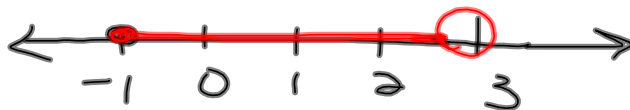
$$\frac{6 \leq r + 7}{-7} \quad \frac{r + 7 < 10}{-7}$$

$$-1 \leq r$$

$$r \geq -1$$

$$\frac{r + 7 < 10}{-7}$$

$$r < 3$$



or - union
 true if one is true
 union of the two inequalities

within
 $\leq \geq$

between
 $< >$

2.)

a = action figure

at least
 $>$
 at most
 $<$

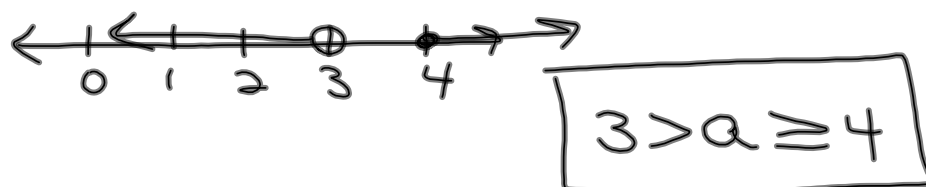


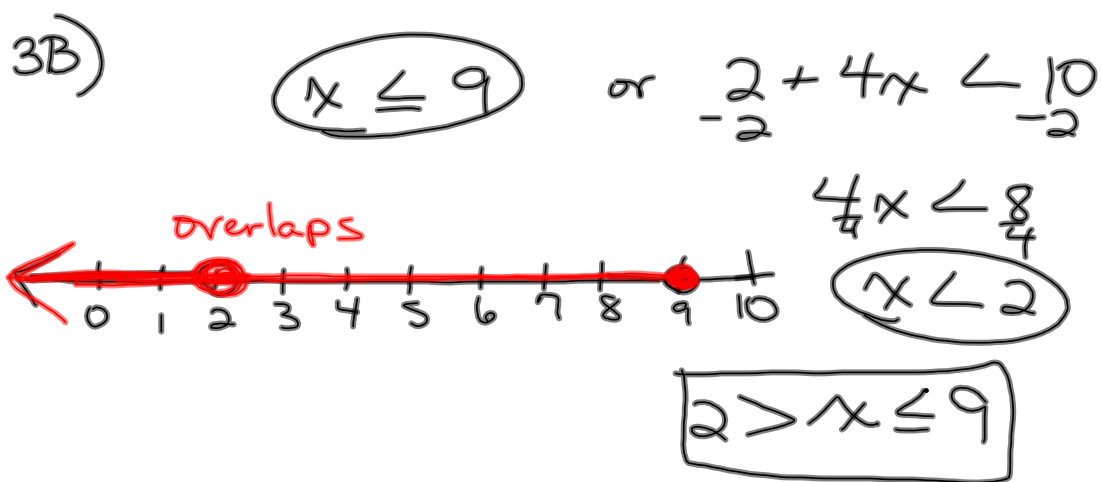
$$a \geq 11.2 \quad a \leq 11.4$$

$$\boxed{11.2 \leq a \leq 11.4} \text{ compound inequality}$$



$$3A) \quad \begin{array}{r} a+1 < 4 \\ -1 \quad -1 \end{array} \quad \text{or} \quad \begin{array}{r} a-1 \geq 3 \\ +1 \quad +1 \\ \hline a \geq 4 \end{array}$$





5-4
6-38 even
and #46, 48, 50