

Name

# 5.4 Solve Compound Inequality

Alg I

## Inequality

3/21/14

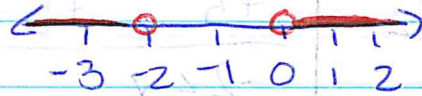
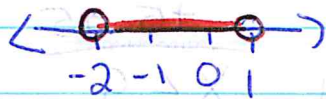
I p/A

I can solve compound inequalities.

Compound Inequality: 2 separate inequalities joined by and or or.

And

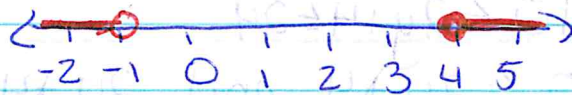
OR



Ch. 5 Quiz

Example 1:

1)  $x < -1$  or  $x \geq 4$

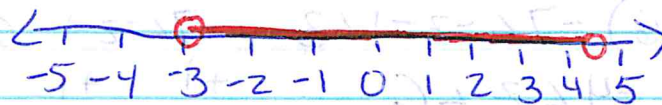


2)  $-3 \leq x < 5$



Example 2:

3)  $c < -3$  or  $c > 4.5$



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## Inequalities

I can solve  
Compound  
Inequalities

Example 3:

$$4) -7 < x - 5 < 4$$

$$-7 < x - 5 \text{ and } x - 5 < 4$$

$$\begin{array}{r} +5 \\ \hline -2 < x \end{array} \text{ and } \begin{array}{r} +5 \\ \hline x < 9 \end{array}$$

$$-2 < x \text{ and } x < 9$$

$$-2 < x < 9$$



$$5) 10 \leq 2y + 4 \leq 24$$

$$10 \leq 2y + 4 \text{ and } 2y + 4 \leq 24$$

$$\begin{array}{r} -4 \\ \hline 6 \leq 2y \end{array} \text{ and } \begin{array}{r} -4 \\ \hline 2y \leq 20 \end{array}$$

$$\frac{6}{2} \leq \frac{2y}{2}$$

$$\frac{2y}{2} \leq \frac{20}{2}$$

$$3 \leq y \text{ and } y \leq 10$$

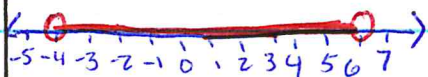
$$3 \leq y \leq 10$$



$$6) -7 < -z - 1 < 3$$

$$-7 < -z - 1 \text{ and } -z - 1 < 3$$

$$\begin{array}{r} +1 \\ \hline -6 < -z \end{array} \text{ and } \begin{array}{r} +1 \\ \hline -z < 4 \end{array}$$



$$6 > z$$

$$z > -4$$

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## Example 4:

7)  $-14 < x - 8 < -1$

$-14 < x - 8$  and  $x - 8 < -1$

$+8$        $+8$        $+8$        $+8$

$-6 < x$  and  $x < 7$

$-6 < x < 7$



8)  $-1 \leq -5t + 2 \leq 4$

$-1 \leq -5t + 2$  and  $-5t + 2 \leq 4$

$-2$        $-2$        $-2$        $-2$

$-3 \leq -5t$  and  $-5t \leq 2$

$-5$        $-5$        $-5$        $-5$

$\frac{3}{5} \geq t$  and  $t \geq -\frac{2}{5}$

$-\frac{2}{5} \leq t \leq \frac{3}{5}$  or  $\frac{3}{5} \geq t \geq -\frac{2}{5}$



## Example 5:

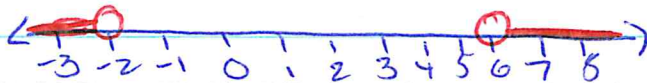
9)  $3h + 1 < -5$  or  $2h - 5 > 7$

$-1$        $-1$        $+5$        $+5$

$3h < -6$        $2h > 12$

$3$        $3$        $2$        $2$

$h < -2$  or  $h > 6$



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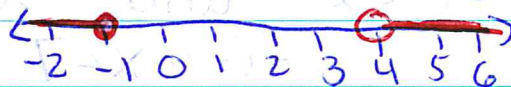
$$10) \quad 4c + 1 \leq -3 \quad \text{or} \quad 5c - 3 > 17$$

$$\frac{4c + 1 \leq -3}{-1 \quad -1} \quad \text{or} \quad \frac{5c - 3 > 17}{+3 \quad +3}$$

$$\frac{4c \leq -4}{4 \quad 4} \quad \text{or} \quad \frac{5c > 20}{5 \quad 5}$$

Ch. 5 Quiz

$$c \leq -1 \quad \text{or} \quad c > 4$$



## Example 6:

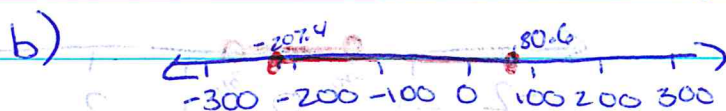
\* Complete Skills  
Practice, pg.  
326, #

$$11) \quad a) \quad -133 \leq \frac{5}{9}(F-32) \leq 27$$

$$\left(\frac{9}{5}\right) - 133 \leq \left(\frac{9}{5}\right) \frac{5}{9}(F-32) \leq 27 \left(\frac{9}{5}\right)$$

$$\frac{-239.4 \leq F - 32}{+32 \quad +32} \quad \text{and} \quad \frac{F - 32 \leq 48.6}{+32 \quad +32}$$

$$\frac{-207.4 \leq F}{\text{and}} \quad \frac{F \leq 80.6}{-207.4 \leq F \leq 80.6}$$



-100°F, 0°F and 25°F