

KEY

Even More 3-6: Compounding Inequities



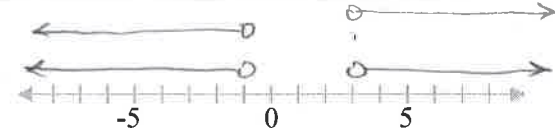
Solve each compound inequality. Graph the solutions on the number line AND state 3 numbers in the solution set. Show all your work!

1. $4m - 5 > 7$ or $4m - 5 < -9$

$$\begin{array}{r} +5 \quad +5 \\ \hline 4m > 12 \end{array} \quad \begin{array}{r} +5 \quad +5 \\ \hline 4m < -4 \end{array}$$

$$\frac{4m}{4} > \frac{12}{4} \quad \frac{4m}{4} < \frac{-4}{4}$$

$$m > 3 \quad \text{or} \quad m < -1$$

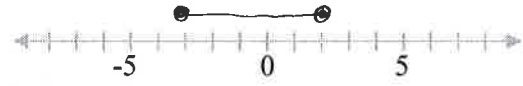


Solution: $m < -1$ or $m > 3$

3 numbers in the solution set: (answer will vary)

2. $-1 \leq x + 2 \leq 4$

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

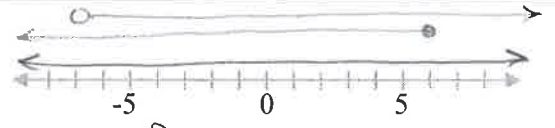


Solution: $-3 \leq x \leq 2$

3 numbers in the solution set: (answers will vary)

3. $y + 6 > -1$ or $y - 2 \leq 4$

$$\begin{array}{r} -6 \quad -6 \\ \hline y > -7 \end{array} \quad \begin{array}{r} +2 \quad +2 \\ \hline y \leq 6 \end{array}$$



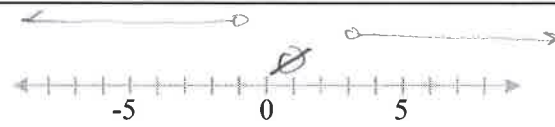
Solution: \mathbb{R}

3 numbers in the solution set: (answer will vary)

4. $2(5 - x) > 12$ and $7x > 4x + 9$

$$\begin{array}{r} 10 - 2x > 12 \\ -10 \quad -10 \\ \hline -2x > 2 \\ -2 \quad -2 \\ \hline x < -1 \end{array} \quad \begin{array}{r} 7x - 4x \\ \hline 3x > 9 \\ 3 \quad 3 \\ \hline x > 3 \end{array}$$

$$x < -1 \text{ and } x > 3$$

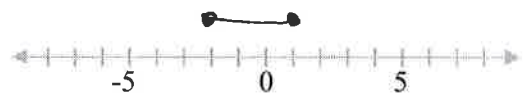


Solution: \emptyset

3 numbers in the solution set: There are none!

5. $-6 \leq 2x - 2 \leq 0$

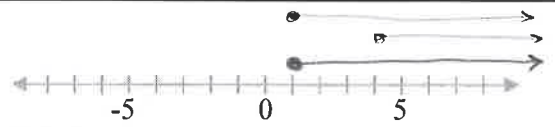
$$\begin{array}{r} +2 \quad +2 \quad +2 \\ \hline -4 \leq 2x \leq 2 \\ 2 \quad 2 \quad 2 \\ \hline -2 \leq x \leq 1 \end{array}$$



Solution: $-2 \leq x \leq 1$

3 numbers in the solution set: (answer will vary)

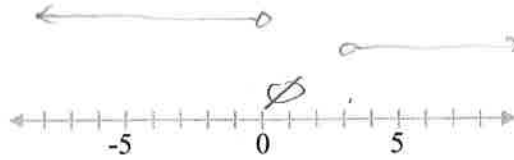
6. $3y + 11 \geq 14$ or $2y \leq 5y - 12$



Solution: $y \geq 1$

3 numbers in the solution set: (answers will vary)

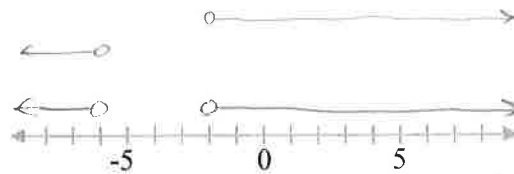
7. $3(c+4) < 12$ and $c+2 > 5$



Solution: \emptyset

3 numbers in the solution set: *There are none!*

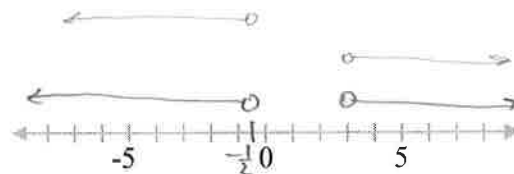
8. $3-2k \leq 7$ or $2k+13 < 1$



Solution: $k < -6$ or $k \geq -2$

3 numbers in the solution set: *(answer will vary)*

9. $2(3w+5) < 7$ or $2w+8 < 5w-1$



Solution: $w < -\frac{1}{2}$ or $w > 3$

3 numbers in the solution set: *(answer will vary)*

10. $8 < 2(x+3)-4 \leq 14$



Solution: $3 < x \leq 6$

3 numbers in the solution set: *(answer will vary)*

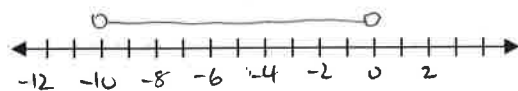
Practice 3-6

Name: KEY
Date: _____ Period: _____

Solve each compound inequality and graph the solution:

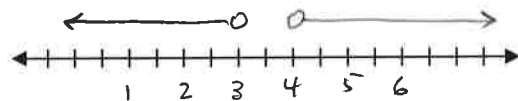
1. $-5 < x + 5 < 5$

$-10 < x < 0$



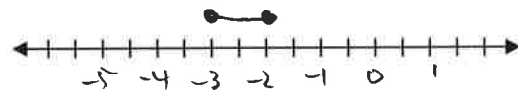
2. $k - 3 > 1$ or $k - 3 < -1$

$k > 4$ or $k < 3$



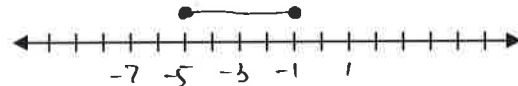
3. $-4d \geq 8$ and $2d \geq -6$

$-3 \leq d \leq -2$



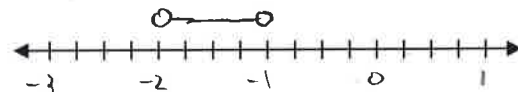
4. $-6 \leq 9 + 3y \leq 6$

$-5 \leq y \leq -1$



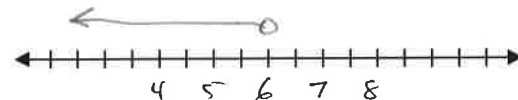
→ 5. $4 - 2x > 6$ and $2 - 3(x + 1) < 5$

$-2 < x < -1$



6. $8(3x - 6) < -24$ or $2(3b - 2) < 4b + 8$

$x < 6$



→ 7. $6 - 2(4x + 1) \geq -10$ and $5 - (x - 8) < 2x + 7$

$2 \leq x \leq 3$

