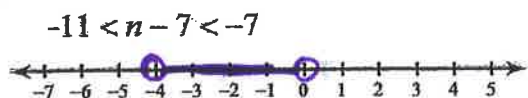
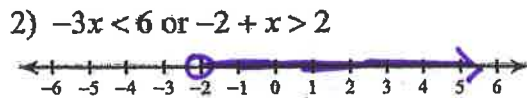


Compound Inequalities Practice

Solve each compound inequality and graph its solution.



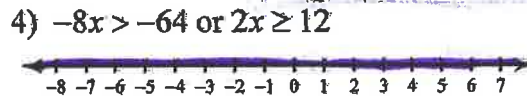
$$\begin{aligned} -11 < n - 7 < -7 \\ +7 \quad +7 \quad +7 \\ -4 < n < 0 \quad (-4, 0) \end{aligned}$$



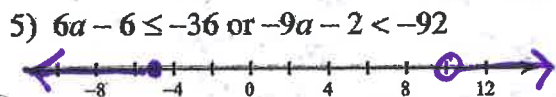
$$\begin{aligned} -3x < 6 & \quad -2 + x > 2 \\ x < -2 & \quad \text{or} \quad x > 4 \\ & \quad \quad \quad (-2, \infty) \end{aligned}$$



$$\begin{aligned} 4 > a + 1 > -4 \\ -1 \quad -1 \quad -1 \\ 3 > a > -5 \quad (-5, 3) \end{aligned}$$



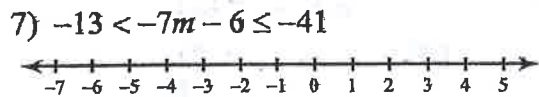
$$\begin{aligned} -8x > -64 & \quad \text{or} \quad 2x \geq 12 \\ x < 8 & \quad \text{or} \quad x \geq 6 \\ & \quad \quad \quad \text{All Real Numbers} \\ & \quad \quad \quad (-\infty, \infty) \end{aligned}$$



$$\begin{aligned} 6a - 6 &\leq -36 & \text{or} & \quad -9a - 2 < -92 \\ 6a &\leq -30 & & \quad -9a < -90 \\ a &\leq -5 & & \quad a > 10 \\ & & & \quad (-\infty, -5] \cup (10, \infty) \end{aligned}$$

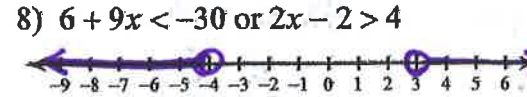


$$\begin{aligned} -25 &\leq 8v - 9 < 71 \\ +9 & \quad +9 & +9 \\ -16 &\leq \frac{8v}{8} < \frac{80}{8} & \quad -2 \leq v < 10 \\ \frac{-16}{8} &\leq v < \frac{80}{8} & \quad [-2, 10) \end{aligned}$$

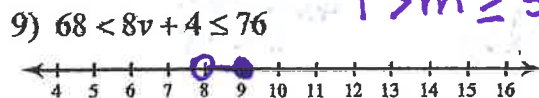


$$\begin{aligned} -13 &< -7m - 6 \leq -41 \\ +6 & \quad +6 & +6 \\ -7 &< -7m &\leq -35 \\ -1 &< m &\leq 5 \end{aligned}$$

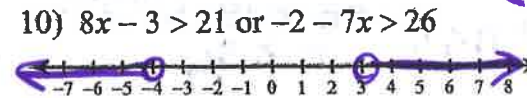
\emptyset



$$\begin{aligned} 6 + 9x &< -30 & \text{or} & \quad 2x - 2 > 4 \\ 9x &< -36 & & \quad 2x > 6 \\ x &< -4 & \quad \text{or} & \quad x > 3 \\ & & & \quad (-\infty, -4) \cup (3, \infty) \end{aligned}$$



$$\begin{aligned} 68 &< 8v + 4 \leq 76 \\ -4 & \quad -4 & -4 \\ 64 &< 8v &\leq 72 \\ \frac{64}{8} &< \frac{8v}{8} &\leq \frac{72}{8} \\ 8 &< v &\leq 9 \\ & & [8, 9] \end{aligned}$$

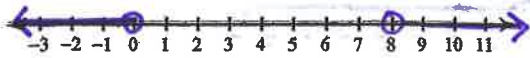


$$\begin{aligned} 8x - 3 &> 21 & \quad \text{or} & \quad -2 - 7x > 26 \\ 8x &> 24 & & \quad -7x > 28 \\ x &> 3 & \quad \text{or} & \quad x < -4 \\ & & & \quad (-\infty, -4) \cup (3, \infty) \end{aligned}$$

Solving Absolute Value Inequalities

Solve each inequality and graph its solution.

1) $|-4+n| > 4$



$$\begin{aligned} -4+n > 4 & \quad -4+n < -4 \\ n > 8 & \quad \text{OR} \quad n < 0 \\ & \quad (-\infty, 0) \cup (8, \infty) \end{aligned}$$

2) $|k+2| > 7$



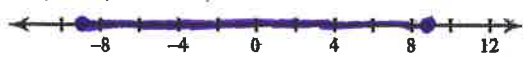
$$\begin{aligned} k+2 > 7 & \quad k+2 < -7 \\ k > 5 & \quad \text{OR} \quad k < -9 \\ & \quad (-\infty, -9) \cup (5, \infty) \end{aligned}$$

3) $|a-2| < 12$



$$\begin{aligned} a-2 < 12 & \quad \text{and} \quad a-2 > -12 \\ a < 14 & \quad \text{and} \quad a > -10 \\ & \quad (-10, 14) \end{aligned}$$

4) $|-3r| \leq 27$



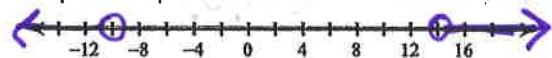
$$\begin{aligned} -3r &\leq \frac{27}{-3} & \text{and} & \quad -3r \geq \frac{-27}{-3} \\ r &\geq -9 & \text{and} & \quad r \leq 9 \\ & \quad [-9, 9] \end{aligned}$$

5) $|-4m-7| \leq 25$



$$\begin{aligned} -4m-7 &\leq 25 & \text{and} & \quad -4m-7 \geq -25 \\ -4m &\leq 32 & \quad -4m &\geq -18 \\ m &\geq -8 & \quad \text{and} & \quad m \geq \frac{9}{2} \\ & \quad [-8, \frac{9}{2}] \end{aligned}$$

6) $|4x-8| > 48$



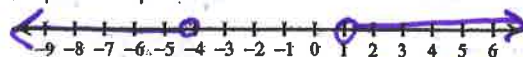
$$\begin{aligned} 4x-8 &> 48 & \quad 4x-8 &< -48 \\ 4x &> 56 & \quad 4x &< -40 \\ x &> 14 & \quad \text{OR} & \quad x < -10 \\ & \quad (-\infty, -10) \cup (14, \infty) \end{aligned}$$

7) $|4x+6| \leq 18$



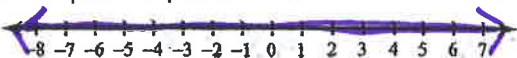
$$\begin{aligned} 4x+6 &\leq 18 & \quad 4x+6 &\geq -18 \\ 4x &\leq 12 & \quad 4x &\geq -24 \\ x &\leq 3 & \quad x &\geq -6 \\ & \quad [-6, 3] \end{aligned}$$

8) $|5r+8| > 13$



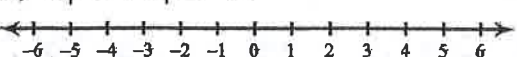
$$\begin{aligned} 5r+8 &> 13 & \quad \text{OR} & \quad 5r+8 < -13 \\ 5r &> 5 & \quad 5r &< -21 \\ r &> 1 & \quad \text{OR} & \quad r < -\frac{21}{5} \\ & \quad (-\infty, -\frac{21}{5}) \cup (1, \infty) \end{aligned}$$

9) $-9|8n-9| \leq 81$



$$\begin{aligned} |8n-9| &\leq -9 & \quad \text{All Reals} \\ 8n-9 &\leq -9 & \quad 8n-9 &\geq 9 \\ 8n &\leq 0 & \quad n \leq 0 & \quad 8n \geq 18 \\ n &\leq 0 & \quad n &\geq \frac{9}{4} \\ & \quad (-\infty, \infty) \end{aligned}$$

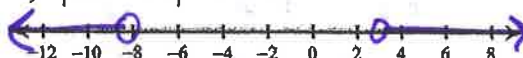
11) $2|9a+3| \leq -84$



$$|9a+3| \leq -42$$

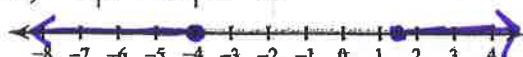
\emptyset

10) $|10+4x| + 2 > 24$



$$\begin{aligned} |10+4x| &> 22 \\ 10+4x &> 22 & \quad 10+4x &< -22 \\ 4x &> 12 & \quad 4x &< -32 \\ x &> 3 & \quad x &< -8 \\ & \quad (-\infty, -8) \cup (3, \infty) \end{aligned}$$

12) $-6|5+4v| \leq -66$



$$\begin{aligned} |5+4v| &\geq 11 \\ 5+4v &\geq 11 & \quad \text{OR} & \quad 5+4v \leq -11 \\ 4v &\geq 6 & \quad 4v &\leq -16 \\ v &\geq \frac{3}{2} & \quad \text{OR} & \quad v \leq -4 \\ & \quad (-\infty, -4] \cup [\frac{3}{2}, \infty) \end{aligned}$$