

NAME _____

DATE _____

SOLVE INEQUALITIES: Worksheet 2

Solve each inequality.

1) $9x < -45$

2) $-22y \geq 66$

3) $-9w \leq 72$

4) $-x > -23$

5) $-r - 4 \leq -2$

6) $-9w + 10 < -26$

7) $-4(x + 3) \geq -28$

8) $2(-5y - 8) < -26$

9) $2(w + 4) - 6w > 28$

10) $8(-3t + 4) + 2(t - 5) \leq 154$

KEY
SOLVE INEQUALITIES: Worksheet 2

Solve each inequality.

1) $9x < -45$

$$\begin{aligned} 9x &< -45 \\ \frac{9x}{9} &< \frac{-45}{9} \\ x &< -5 \end{aligned}$$

2) $-22y \geq 66$

$$\begin{aligned} -22y &\geq 66 \\ \frac{-22y}{-22} &\geq \frac{66}{-22} \\ y &\leq -3 \end{aligned}$$

3) $-9w \leq 72$

$$\begin{aligned} -9w &\leq 72 \\ \frac{-9w}{-9} &\leq \frac{72}{-9} \\ w &\geq -8 \end{aligned}$$

4) $-x > -23$

$$\begin{aligned} -x &> -23 \\ \frac{-x}{-1} &> \frac{-23}{-1} \\ x &< 23 \end{aligned}$$

5) $-r - 4 \leq -2$

$$\begin{aligned} -r - 4 &\leq -2 \\ -r - 4 + 4 &\leq -2 + 4 \\ -r &\leq 2 \\ \frac{-r}{-1} &\leq \frac{2}{-1} \\ r &\geq -2 \end{aligned}$$

6) $-9w + 10 < -26$

$$\begin{aligned} -9w + 10 &< -26 \\ -9w + 10 - 10 &< -26 - 10 \\ -9w &< -36 \\ \frac{-9w}{-9} &< \frac{-36}{-9} \\ w &> 4 \end{aligned}$$

7) $-4(x + 3) \geq -28$

$$\begin{aligned} -4(x + 3) &\geq -28 \\ -4x - 12 &\geq -28 \\ -4x - 12 + 12 &\geq -28 + 12 \\ -4x &\geq -16 \\ \frac{-4x}{-4} &\geq \frac{-16}{-4} \\ x &\leq 4 \end{aligned}$$

8) $2(-5y - 8) < -26$

$$\begin{aligned} 2(-5y - 8) &< -26 \\ -10y - 16 &< -26 \\ -10y - 16 + 16 &< -26 + 16 \\ -10y &< -10 \\ \frac{-10y}{-10} &< \frac{-10}{-10} \\ y &> 1 \end{aligned}$$

9) $2(w + 4) - 6w > 28$

$$\begin{aligned} 2(w + 4) - 6w &> 28 \\ 2w + 8 - 6w &> 28 \\ -4w + 8 &> 28 \\ -4w + 8 - 8 &> 28 - 8 \\ -4w &> 20 \\ \frac{-4w}{-4} &> \frac{20}{-4} \\ w &< -5 \end{aligned}$$

10) $8(-3t + 4) + 2(t - 5) \leq 154$

$$\begin{aligned} 8(-3t + 4) + 2(t - 5) &\leq 154 \\ -24t + 32 + 2t - 10 &\leq 154 \\ -22t + 22 &\leq 154 \\ -22t + 22 - 22 &\leq 154 - 22 \\ -22t &\leq 132 \\ \frac{-22t}{-22} &\leq \frac{132}{-22} \\ t &\geq -6 \end{aligned}$$