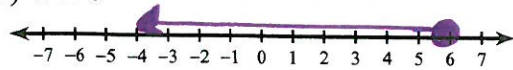
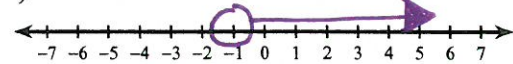
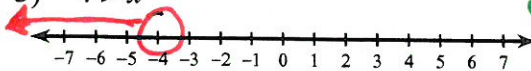
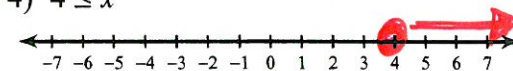


Graph linear inequalities on a number line.

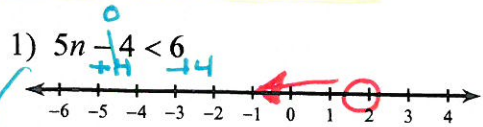
1) $x \leq 6$ 2) $x > -1$ 3) $-4 > x$ 4) $4 \leq x$ 

① Rewrite INEQUALITIES:

VARIABLE SYMBOL NUMBER

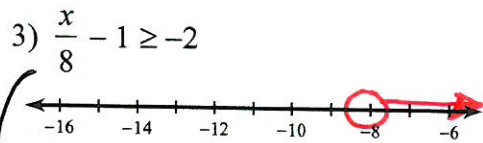
② NOTE: When the variable is in the above form; THEN the INEQUALITY SYMBOL AND arrow on the number line Go in the same direction.

Solve linear inequalities involving two-steps. Clearly show EACH STEP. **Circle your answer.**
 Then graph the solution.



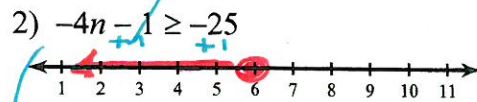
$$\begin{aligned} 5n - 4 &< 6 \\ +4 & \quad +4 \\ \hline 5n &< 10 \\ \frac{5n}{5} & \quad \frac{10}{5} \\ n &< 2 \end{aligned}$$

$n < 2$



$$\begin{aligned} \frac{x}{8} - 1 &\geq -2 \\ +1 & \quad +1 \\ \hline \frac{x}{8} &\geq -1 \\ 8 \left(\frac{x}{8} \right) &\geq (-1) \cdot 8 \\ x &\geq -8 \end{aligned}$$

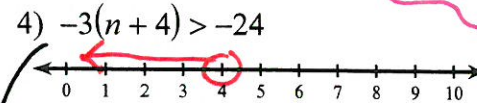
$x \geq -8$ **DO NOT SWITCH SYMBOL.**



$$\begin{aligned} -4n - 1 &\geq -25 \\ +1 & \quad +1 \\ \hline -4n &\geq -24 \\ \frac{-4n}{-4} & \quad \frac{-24}{-4} \\ n &\leq 6 \end{aligned}$$

$n \leq 6$

When you mult or divide the variable by a negative number, THEN switch the direction of the symbol



$$\begin{aligned} -3(n+4) &> -24 \\ -3n - 12 &> -24 \\ +12 & \quad +12 \\ \hline -3n &> -12 \\ \frac{-3n}{-3} & \quad \frac{-12}{-3} \\ n &< 4 \end{aligned}$$

$n < 4$

You must switch symbol!

Solve compound inequalities. Clearly show EACH STEP. Circle your answer. Then graph the solution.

remember "or"; "and"

1) $6x - 6 \geq 18$ or $3 + 2x < 1$

$$\begin{array}{r} 6x - 6 \geq 18 \\ +6 \quad +6 \\ \hline 6x \geq 24 \\ \frac{6x}{6} \geq \frac{24}{6} \\ x \geq 4 \end{array}$$
 or

$$\begin{array}{r} 3 + 2x < 1 \\ -3 \quad -3 \\ \hline 2x < -2 \\ \frac{2x}{2} < \frac{-2}{2} \\ x < -1 \end{array}$$

$x \geq 4$ OR $x < -1$

2) $3 - 6x \geq 27$ or $1 - 5x < -29$

$$\begin{array}{r} 3 - 6x \geq 27 \\ -3 \quad -3 \\ \hline -6x \geq 24 \\ \frac{-6x}{-6} \geq \frac{24}{-6} \\ x \leq -4 \end{array}$$
 or

$$\begin{array}{r} 1 - 5x < -29 \\ +1 \quad +1 \\ \hline -5x < -30 \\ \frac{-5x}{-5} < \frac{-30}{-5} \\ x > 6 \end{array}$$

$x \leq -4$ OR $x > 6$

3) $-3 \leq 1 + 4x \leq 13$

$$\begin{array}{r} -3 \leq 1 + 4x \leq 13 \\ -1 \quad +1 \quad -1 \\ \hline -4 \leq 4x \leq 12 \\ \frac{-4}{4} \leq \frac{4x}{4} \leq \frac{12}{4} \\ -1 \leq x \leq 3 \end{array}$$

$-1 \leq x \leq 3$

4) $-2 < 2 - 2n < 10$

$$\begin{array}{r} -2 < 2 - 2n < 10 \\ -2 \quad +2 \quad -2 \\ \hline -4 < -2n < 8 \\ \frac{-4}{-2} > \frac{-2n}{-2} > \frac{8}{-2} \\ 2 > n > -4 \end{array}$$

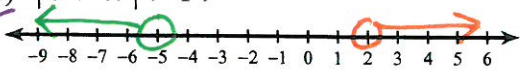
rewrite \rightarrow **$-4 < n < 2$**

Rewrite

- Ⓐ $| | > n \rightarrow \text{"OR"}$
- Ⓑ $| | < n \rightarrow \text{"and"}$

Solve the inequalities. Clearly show EACH STEP. **Circle your answer.** Then graph the solution.


1) $|6 + 4v| > 14$



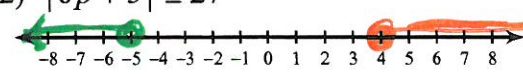
OR

$$\begin{array}{r} 6 + 4v < -14 & \text{OR} & 6 + 4v > 14 \\ \hline -6 & & -6 \\ \hline 4v < -20 & & 4v > 8 \\ \hline \frac{4v}{4} < \frac{-20}{4} & & \frac{4v}{4} > \frac{8}{4} \\ v < -5 & & v > 2 \end{array}$$

$v < -5$ OR $v > 2$




2) $|6p + 3| \geq 27$



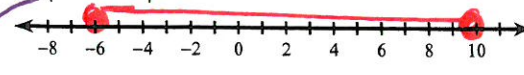
OR

$$\begin{array}{r} 6p + 3 \leq -27 & \text{OR} & 6p + 3 \geq 27 \\ \hline -3 & & -3 \\ \hline 6p \leq -30 & & 6p \geq 24 \\ \hline \frac{6p}{6} \leq \frac{-30}{6} & & \frac{6p}{6} \geq \frac{24}{6} \\ p \leq -5 & & p \geq 4 \end{array}$$

$p \leq -5$ OR $p \geq 4$




3) $|3x - 6| \leq 24$



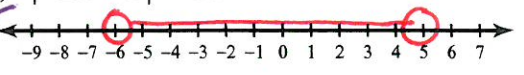
and

$$\begin{array}{r} -24 \leq 3x - 6 \leq 24 \\ \hline +6 & & +6 \\ \hline -18 \leq 3x \leq 30 \\ \hline \frac{-18}{3} \leq \frac{3x}{3} \leq \frac{30}{3} \\ -6 \leq x \leq 10 \end{array}$$

$-6 \leq x \leq 10$



4) $|-2x - 1| < 11$



and

$$\begin{array}{r} -11 < -2x - 1 < 11 \\ \hline +1 & & +1 \\ \hline -10 < -2x < 12 \\ \hline \frac{-10}{-2} < \frac{-2x}{-2} < \frac{12}{-2} \\ 5 > x > -6 \end{array}$$

rewrite \rightarrow **$-6 < x < 5$**

