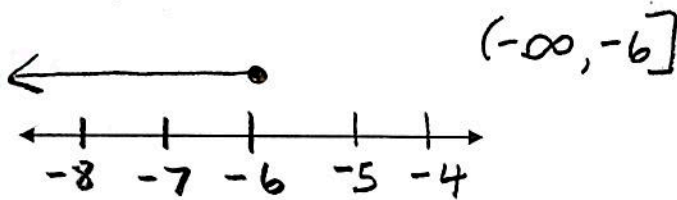


Determine the solution set to the inequality. Represent the solution set on a number line and in interval notation.

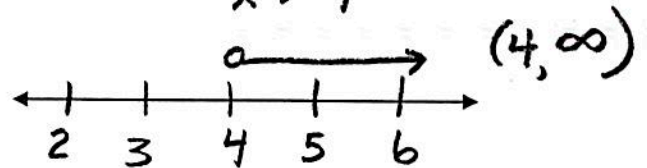
1.  $8y + 4 \leq 7y - 2$

$$\begin{array}{r} -7y \quad -7y \\ y + 4 \leq -2 \\ -4 \quad -4 \\ y \leq -6 \end{array}$$



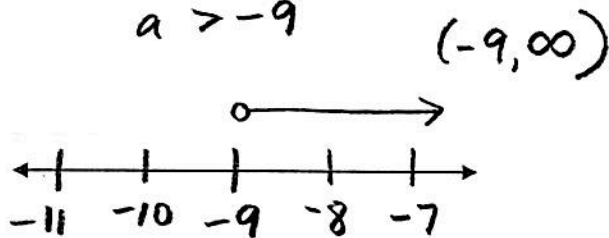
2.  $4(x - 3) > 2(x - 2)$

$$\begin{array}{r} 4x - 12 > 2x - 4 \\ -2x \quad -2x \\ 2x - 12 > -4 \\ 2x > 8 \\ x > 4 \end{array}$$



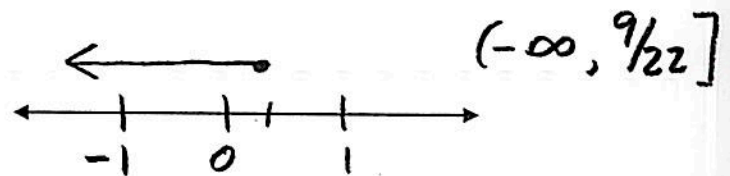
3.  $6a - 5 < 7a + 4$

$$\begin{array}{r} -6a \quad -6a \\ -5 < a + 4 \\ -4 \quad -4 \\ -9 < a \\ a > -9 \end{array}$$



4.  $13x \leq 9(1 - x)$

$$\begin{array}{r} 13x \leq 9 - 9x \\ +9x \quad +9x \\ \frac{22x}{22} \leq \frac{9}{22} \\ x \leq \frac{9}{22} \end{array}$$



5. Solve  $7 - \frac{2}{3}x < x - 8$  algebraically. If  $x$  is a number in the interval  $[9, 15)$ , state all integers that satisfy the inequality.

$$\begin{array}{r} 7 - \frac{2}{3}x < x - 8 \\ +8 \quad +8 \\ 15 - \frac{2}{3}x < x \\ +\frac{2}{3}x \quad +\frac{2}{3}x \\ 15 < 1\frac{2}{3}x \end{array}$$

consider 9, 10, 11, 12, 13, 14

$$\begin{array}{r} 15 < \frac{5}{3}x \\ \frac{3}{5}(15) < \frac{3}{5}\left(\frac{5}{3}x\right) \\ 9 < x \\ x > 9 \end{array} \left\{ 10, 11, 12, 13, 14 \right\}$$