

Bell Work

Solve and show all work.

1. $6(a - 3) = 2a + 10$

2. $7(b + 1) - 4(b - 3) = -6$

3. Find 2 consecutive integers with a sum of 451.

4. $(4c^7d^5)(-3c^{-4}d^3)^2$

Solving inequalities is today's lesson.

$$4x - 6 > 22$$

$$\left\{ y \mid y > \frac{11}{2} \right\}$$

$$7(d - 4) \leq 3(d + 1)$$

$$\left(-\infty, \frac{31}{4} \right]$$

Solve and graph this inequality.

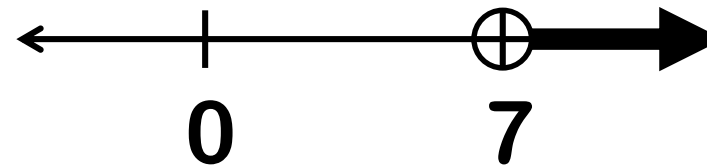
Write your answer in set and interval notation.

$$\begin{array}{r} 4x - 6 > 22 \\ + 6 \quad + 6 \\ \hline \end{array}$$

Solve like an equation.

$$\frac{4x}{4} > \frac{28}{4}$$

$$\{x \mid x > 7\} \quad (7, +\infty)$$



We shade to the right of 7 because all numbers greater than 7 are part of the solution. However, the circle is not shaded in because 7 is not part of the solution.

Solve and graph this inequality.

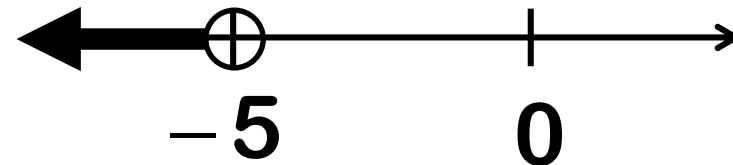
Write your answer in set and interval notation.

$$\begin{array}{r} -2x - 7 > 3 \\ +7 \quad +7 \\ \hline \end{array}$$

$$\begin{array}{r} -2x > 10 \\ -2 \quad \downarrow \quad -2 \\ \hline \end{array}$$

$$\{x \mid x < -5\}$$

$$(-\infty, -5)$$

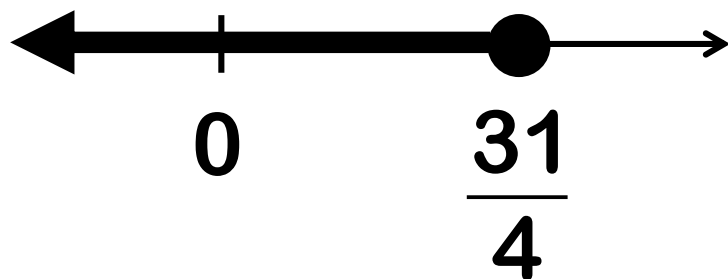


When multiplying or dividing by a negative number, switch the inequality sign around.

Solve and graph this inequality.

Write your answer in set and interval notation.

$<, >$: open circle
 \leq, \geq : closed circle



$$7(d - 4) \leq 3(d + 1)$$

$$\begin{array}{r} 7d - 28 \leq 3d + 3 \\ -3d \quad -3d \\ \hline \end{array}$$

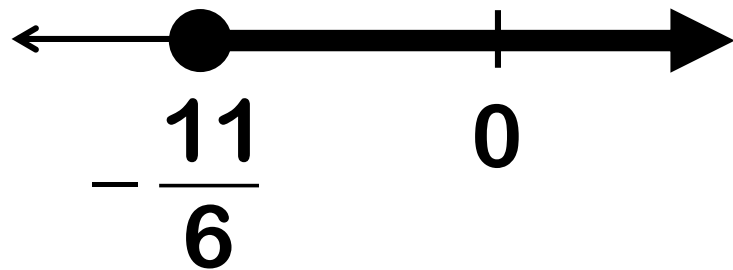
$$\begin{array}{r} 4d - 28 \leq 3 \\ +28 \quad +28 \\ \hline \end{array}$$

$$\frac{4d}{4} \leq \frac{31}{4}$$

$$\left\{ d \mid d \leq \frac{31}{4} \right\} \quad \left(-\infty, \frac{31}{4} \right]$$

Solve and graph this inequality.

Write your answer in set and interval notation.



$$2(h - 3) \leq 8h + 5$$

$$\begin{array}{r} 2h - 6 \leq 8h + 5 \\ -2h \quad -2h \\ \hline \end{array}$$

$$-6 \leq 6h + 5$$

$$\begin{array}{r} -6 \leq 6h + 5 \\ -5 \quad -5 \\ \hline \end{array}$$

$$\begin{array}{r} -11 \leq 6h \\ \hline \end{array}$$

$$-\frac{11}{6} \leq h$$

$$\left\{ h \mid h \geq -\frac{11}{6} \right\} \quad \left(-\frac{11}{6}, +\infty \right)$$

Solve and graph this inequality.

Write your answer in set and interval notation.

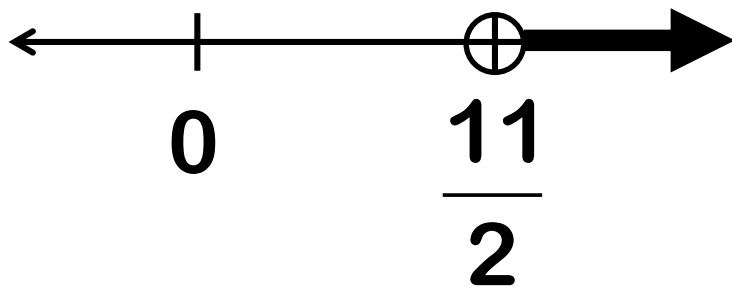
$$6(y - 3) > 2(y + 4) - 4$$

$$\begin{array}{r} 6y - 18 > 2y + 4 \\ -2y \quad -2y \\ \hline \end{array}$$

$$\begin{array}{r} 4y - 18 > 4 \\ +18 \quad +18 \\ \hline \end{array}$$

$$\frac{4y}{4} > \frac{22}{4}$$

$$\left\{ y \mid y > \frac{11}{2} \right\} \quad \left(\frac{11}{2}, +\infty \right)$$



Assignment:

Solving Inequalities Worksheet

Don't graph the answer.