

For problems 1 to 3:
Solve each compound inequality then graph the solution.

1. $6q - 11 > 16$ and $8 - 2q > -34 - 8$

$$\begin{array}{r} 6q - 11 > 16 \\ +11 \quad +11 \\ \hline 6q > 27 \\ \frac{6q}{6} > \frac{27}{6} \\ q > 4.5 \end{array}$$

$$\begin{array}{r} 8 - 2q > -34 - 8 \\ -8 \quad -8 \\ \hline -2q > -42 \\ \frac{-2q}{-2} > \frac{-42}{-2} \\ q < 21 \end{array}$$

$q > 4.5$ and $q < 21 \rightarrow 4.5 < q < 21$

2. $4 - 4k \geq 28$ or $4k + 8 - 3k \geq 21$

$$\begin{array}{r} 4 - 4k \geq 28 \\ -4 \quad -4 \\ \hline -4k \geq 24 \\ \frac{-4k}{-4} \geq \frac{24}{-4} \\ k \leq -6 \end{array}$$

$$\begin{array}{r} 4k + 8 - 3k \geq 21 \\ 1k + 8 - 3k \geq 21 \\ \frac{1k}{1} \geq \frac{13}{1} \\ k \geq 13 \end{array}$$

$k \leq -6$ or $k \geq 13$

3. $-23 < 4m - 3 < 15 + 3$

$$\begin{array}{r} -23 < 4m - 3 < 15 + 3 \\ +3 \quad +3 \\ \hline -20 < 4m < 18 \\ \frac{-20}{4} < \frac{4m}{4} < \frac{18}{4} \\ -5 < m < 4.5 \end{array}$$

4. Solve this inequality.

$$4m - 2(m - 7) - 3 + m > 5m - 14 - 2m + 5$$

$$\begin{array}{r} 4m - 2m + 14 - 3 + m > 5m - 14 - 2m + 5 \\ 3m + 11 > 3m - 9 \\ +9 \quad +9 \\ \hline 3m + 20 > 3m \\ -3m \quad -3m \\ \hline 20 > 0 \end{array}$$

Sol: All Real #s

5. Solve this inequality.

$$3k - 9 + 2k \leq 5 - 6k - 14$$

$$\begin{array}{r} 3k - 9 + 2k \leq 5 - 6k - 14 \\ 5k - 9 \leq -9 - 6k \\ +9 \quad +9 \\ \hline 5k \leq -6k \\ +6k \quad +6k \\ \hline 11k \leq 0 \\ \frac{11k}{11} \leq \frac{0}{11} \\ k \leq 0 \end{array}$$

$k \leq 0$