

Name

5.3 Solve Multi-Step Inequalities

Alg I.

Inequalities

I can solve multi-step inequalities.

Example 1/2:

1) $2x - 5 \leq 23$

$$\begin{array}{r} 2x - 5 \leq 23 \\ +5 \quad +5 \\ \hline 2x \leq 28 \\ \frac{2x}{2} \leq \frac{28}{2} \end{array}$$

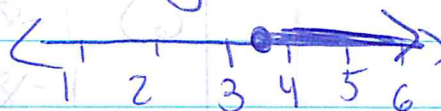
$$x \leq 14$$



2) $-6y + 5 \leq -16$

$$\begin{array}{r} -6y + 5 \leq -16 \\ -5 \quad -5 \\ \hline -6y \leq -21 \\ \frac{-6y}{-6} \leq \frac{-21}{-6} \end{array}$$

$$y \geq 3.5$$



3) ~~$\frac{1}{4}(p-2) \geq -2(-4)$~~ OR $-\frac{1}{4}(p-2) > -2$

$$\begin{array}{r} p - 2 \leq 8 \\ +2 \quad +2 \\ \hline p \leq 10 \end{array}$$

$$p < 20$$

$$\begin{array}{r} -\frac{1}{4}p + 3 > -2 \\ -3 \quad -3 \\ \hline -\frac{1}{4}p > -5 \end{array}$$

$$\frac{1}{4}p < 20$$

$$p > 20$$



Example 3:

4) $5x - 12 \leq 3x - 4$

$$\begin{array}{r} 5x - 12 \leq 3x - 4 \\ -3x \quad -3x \\ \hline 2x - 12 \leq -4 \end{array}$$

$$\begin{array}{r} 2x - 12 \leq -4 \\ +12 \quad +12 \\ \hline 2x \leq 8 \end{array}$$

$$\frac{2x}{2} \leq \frac{8}{2} \quad x \leq 4$$



Name

Solve Multi-Step

Alg I.

Inequalities

I can solve
multi-step
inequalities.

Example 4:

$$5) \widehat{5(m+5)} < 5m+17$$

$$5m+25 < 5m+17$$

$$\begin{array}{r} -5m \quad -5m \\ \hline \end{array}$$

$$25 < 17 \quad \boxed{\text{NO SOLUTION}}$$

Ch. 5 Quiz

$$6) 1-8s \leq -4(2s-1)$$

$$1-8s \leq -8s+4$$

$$\begin{array}{r} +8s \quad +8s \\ \hline \end{array}$$

$$1 \leq 4$$

$\boxed{\text{All Real Numbers}}$

* Complete Skills
Practice, pg. 314,
#

Example 5:

$$7) 209g + 9 \leq 20$$

$$\begin{array}{r} -9 \quad -9 \\ \hline \end{array}$$

$$209g \leq 11$$

$$\begin{array}{r} 209 \quad 209 \\ \hline \end{array}$$

$$\boxed{g \leq 5.26 \text{ gallons}}$$

$$8) 500 + 14x \geq 1800$$

$$\begin{array}{r} -500 \\ \hline \end{array}$$

$$\begin{array}{r} -500 \\ \hline \end{array}$$

$$14x \geq 1300$$

$$\begin{array}{r} 14 \quad 14 \\ \hline \end{array}$$

$$\boxed{x \geq 92.86/\text{wk}}$$