Warm Up:
Write an inequality for each graph.

\[ x \geq -1 \]

\[ x \leq 0 \]

ACT Question:
What is the largest integer smaller than \( \sqrt{50} \)?
A.) 4   B.) 6   C.) 7   D.) 9   E.) 12

Vocabulary:
Equivalent inequalities: are inequalities that have the same solutions.

Examples 1 and 2:
Tell what number you add or subtract to each side of the inequality to solve it.

\[ x - 4 < 0 \]

\[ 6.8 \leq m - 4.2 \]
Examples 3 and 4:  (with your shoulder buddy)
Tell what number you add or subtract to each side of the
inequality to solve it.

\[ x + 3 \geq 0 \]

\[ \text{Subtract 3} \]

\[ -3.8 > m + 5 \]

\[ \text{Subtract 5} \]

Examples 5 and 6:
Solve and graph each inequality.

\[ \frac{8}{4} \leq f + 4 \]

\[ -4 \]

\[ \frac{4}{4} \leq f \]

\[ f \geq 4 \]

\[ y - \frac{12}{2} + \frac{2}{2} \]

\[ y < -5 \]

Examples 7 and 8:
Solve and graph each inequality.

\[ \frac{12}{12} \leq x - \frac{2}{12} \]

\[ 1 \leq x \]

\[ x \leq 14 \]

\[ \frac{v + 6 > 5}{-6} \]

\[ v > -1 \]

\[ -1 \]

\[ \text{Examples 9 and 10:}  \ (with your shoulder buddy) \]
Solve and graph each inequality.

\[ p + 1 \frac{1}{2} \leq 1 \frac{1}{2} \]

\[ -\frac{1}{2} \leq p \leq 1 \frac{1}{2} \]

\[ \geq 0 \]

\[ -4.3 < 2.4 + s \]

\[ -2.4 - 2.4 \]

\[ -4.7 < 8 \]

\[ 8 > -0.7 \]
Examples 11 and 12:
Solve each inequality.

\[-2p - 4 + 3p + 10 \geq 10\]
\[\frac{x - 3 + 6}{-3 - 3} \geq 7\]
\[p > 14\]

Example 13 and 14: (with your shoulder buddy)
Solve each inequality.

\[6x - 5x - 2 \geq 6\]
\[\frac{y + 5}{-5} < 8\]
\[y < 3\]

Example 15:
The goal of a toy drive is to donate more than 1000 toys. The toy drive already has collected 300 toys. How many more toys does the toy drive need to meet its goal? Write and solve an inequality to find the number of toys needed.

\[x + 300 > 1000\]
\[-300\]
\[x > 700\] toys

Summary
What does equivalent inequalities mean?
Inequalities with the same solutions
Do we solve inequalities any differently than equations?

No!
Coursework

pg 174 # 9-23 odd, 29-37 odd, 42, 43, 54, 61, 64