Quiz 4.3–4.4

1. \(3p \leq 18\)
   \[
   \frac{3p}{3} \leq \frac{18}{3}
   \]
   \(p \leq 6\)
   The solution is \(p \leq 6\).

2. \(2x > -\frac{3}{5}\)
   \[
   \frac{2x}{2} > \frac{-3}{5} + 2
   \]
   \(x > -\frac{3}{5} \cdot \frac{1}{2}\)
   \(x > -\frac{3}{10}\)
   The solution is \(x > -\frac{3}{10}\).

3. \(\frac{r}{3} \geq -5\)
   \(3 \cdot \frac{r}{3} \geq 3 \cdot (-5)\)
   \(r \geq -15\)
   The solution is \(r \geq -15\).

4. \(-\frac{z}{8} < 1.5\)
   \(-8 \cdot \left(-\frac{z}{8}\right) > -8 \cdot 1.5\)
   \(z > -12\)
   The solution is \(z > -12\).

5. \(3n + 2 \leq 11\)
   \[-2 -2\]
   \(3n \leq 9\)
   \[
   \frac{3n}{3} \leq \frac{9}{3}
   \]
   \(n \leq 3\)
   The solution is \(n \leq 3\).

6. \(-2 < 5 - \frac{k}{2}\)
   \[-5 -5\]
   \(-7 < -\frac{k}{2}\)
   \(-2 \cdot (-7) > -2 \cdot \left(-\frac{k}{2}\right)\)
   \(14 > k\)
   The solution is \(k < 14\).

7. \(1.3m - 3.8 < -1.2\)
   \[+3.8 +3.8\]
   \(1.3m < 2.6\)
   \[
   \frac{1.3m}{1.3} < \frac{2.6}{1.3}
   \]
   \(m < 2\)
   The solution is \(m < 2\).

8. \(4.8 \geq 0.3(12 - y)\)
   \[4.8 \geq 3.6 - 0.3\]
   \[-3.6 -3.6\]
   \(1.2 \geq -0.3y\)
   \[
   \frac{1.2}{-0.3} \leq \frac{-0.3y}{-0.3}
   \]
   \(-4 \leq y\)
   The solution is \(y \geq -4\).
9. The quotient of a number and 5 is less than 4.

\[
\frac{n}{5} < 4
\]

\[
5 \cdot \frac{n}{5} < 5 \cdot 4
\]

\[
n < 20
\]

The solution is \( n < 20 \).

10. Six times a number is at least -14.

\[
\frac{6n}{6} \geq -14
\]

\[
n \geq -\frac{14}{6}
\]

\[
n \geq -\frac{7}{3} \quad \text{or} \quad n \geq -\frac{21}{6} = -\frac{7}{2}
\]

The solution is \( n \geq -\frac{7}{3} \) or \( n \geq -\frac{7}{2} \).

11. Words: Cost of times number of is at amount each peppers most money you have.

Variable: Let \( x \) be the number of peppers.

Inequality: \( 1.50 \cdot x \leq 18 \)

\[
1.5x \leq 18
\]

\[
\frac{1.5x}{1.5} \leq \frac{18}{1.5}
\]

\[
x \leq 12
\]

You can buy at most 12 peppers.

12. Words: Amount minus cost times number of gift card of each movies is worth is at least the amount remaining on the gift card.

Variable: Let \( x \) be the number of movies.

Inequality: \( 90 - 12 \cdot x \geq 30 \)

\[
90 - 12x \geq 30
\]

\[
-90
\]

\[
-12x \geq -60
\]

\[
\frac{-12x}{-12} \leq \frac{-60}{-12}
\]

\[
x \leq 5
\]

You can buy no more than 5 movies.

13. Words: Amount times number is fundraising earned of at goal, for each boxes least box sold

Variable: Let \( n \) be the number of boxes sold.

Inequality: \( 6.25 \cdot x \geq 500 \)

\[
6.25x \geq 500
\]

\[
\frac{6.25x}{6.25} \geq \frac{500}{6.25}
\]

\[
x \geq 80
\]

You must sell at least 80 boxes.

14. Area = \[
\frac{1}{2} bh
\]

\[
\frac{1}{2}(12)(c) \geq 60
\]

\[
6c \geq 60
\]

\[
\frac{6c}{6} \geq \frac{60}{6}
\]

\[
c \geq 10
\]

The least possible value of \( c \) is 10 feet.