73) \[-2x - 4 \leq 11\]
\[-2x \leq 11 + 4\]
\[-2x \leq 15\]
\[\frac{-2x}{-2} \quad \frac{15}{-2}\]
\[x \geq -7.5\]

\[\begin{array}{c}
-7.5 \\
0
\end{array}\]

\[\left[\begin{array}{c}
-7.5 \\
\infty
\end{array}\right) \quad \{x \mid x \geq -7.5\}\]

75) \[-12 > 7x + 9\]
\[-12 - 9 > 7x\]
\[-21 > 7x\]
\[\frac{-21}{7} > x\]
\[-3 > x\]
\[x < -3\]

\[\begin{array}{c}
-3 \\
0
\end{array}\]

\[(-\infty, -3) \quad \{x \mid x < -3\}\]
78) \( 3t \geq 7t - 35 \)
\[
3t - 7t \geq -35
\]
\[
-4t \geq -35
\]
\[
-\frac{t}{4} \leq \frac{35}{-4}
\]
\[
t \leq 8.75
\]

\[
(-\infty, 8.75]
\}
\[
\{ t \mid t \leq 8.75 \}
\]

81) \( 8 - 6(x-3) > -4x + 12 \)
\[
8 - 6x + 18 > -4x + 12
\]
\[
-6x + 4x > 12 - 8 - 18
\]
\[
-2x > -14
\]
\[
-\frac{2}{-2} \quad \rightarrow \quad -2
\]
\[
x < 7
\]

\[
(-\infty, 7)
\}
\[
\{ x \mid x < 7 \}
\]
78) \[ 2a + 3(a + 5) > -4a - (3a - 1) + 6 \]
\[ 2a + 3a + 15 > -4a - 3a + 1 + 6 \]
\[ 2a + 3a + 4a + 3 > 1 + 6 - 15 \]
\[ \frac{12a}{12} > \frac{-8}{12} \]
\[ a > -\frac{2}{3} \]

\[ \left( -\frac{2}{3}, \infty \right) \quad \{ a \mid a > -\frac{2}{3} \} \]

96) \[ -10 \leq 4x + 6 < -6 \]
\[ -10 - 6 \leq 4x + 6 - 6 < -6 - 6 \]
\[ -16 \leq 4x < -12 \]
\[ -4 \leq x < -3 \]

\[ \left[ -4, -3 \right) \quad \{ x \mid -4 \leq x < -3 \} \]
9a) \( \frac{x}{5} + \frac{x}{3} < 16 \)

\[
\begin{align*}
3 \cdot \frac{x}{5} + 5 \cdot \frac{x}{3} & < 16 \\
3x & < 240 \\
\frac{3x}{8} & < 30 \\
x & < 30
\end{align*}
\]

\((-\infty, 30) \quad \{ x \mid x < 30 \} \)

10a) \( \frac{x-6}{2} + \frac{3}{8} \leq -\frac{x}{4} \)

\[
\begin{align*}
\frac{4}{4} \cdot \frac{x-6}{2} + \frac{3}{8} & \leq -\frac{x}{4} \cdot \frac{2}{2} \\
4(x-6) + 3 & \leq -2x \\
4x - 24 + 3 & \leq -2x \\
4x + 2x & \leq 24 - 3 \\
6x & \leq 21 \\
x & \leq \frac{7}{2}
\end{align*}
\]

\((-\infty, \frac{7}{2}] \quad \{ x \mid x \leq \frac{7}{2} \} \)
\[ A = \{1,2,3,4,5,6\} \]
\[ B = \{1,3,5,7,9\} \]
\[ A \cap B = \{1,3,5\} \]
\[ A \cap C = \{1,3,6\} \]
\[ B \cap C = \{1,3\} \]
\[ A \cup B = \{1,2,3,4,5,6,7,9\} \]
\[ A \cup C = \{1,2,3,4,5,6,12\} \]
\[ B \cup C = \{1,3,5,6,7,9,12\} \]

\# \quad (3,7) \cap [4,10) = [4,7]

\[ 0 \quad 3 \quad 4 \quad 7 \quad 10 \]

\[ (3,7) \cup [4,10) = (3,10) \]