1. Rewrite the following expressions without absolute value.

\[ |-2\sqrt{3} + \frac{5}{2}| = \]

The use of calculator reveals that \(-2\sqrt{3} + \frac{5}{2}\) is negative hence \(|-2\sqrt{3} + \frac{5}{2}| = -\left(-2\sqrt{3} + \frac{5}{2}\right) = 2\sqrt{3} - \frac{5}{2}\)

2. Solve the following inequality.

\[ |6 + 4x| \leq 7 \]

\[-7 \leq -6 + 4x \leq 7 \Rightarrow -1 \leq 4x \leq 13 \]

\[-\frac{1}{4} \leq x \leq \frac{13}{4} \quad \text{Solution Set:} \quad \left[-\frac{1}{4}, \frac{13}{4}\right]\]

3. Simplify the expression using absolute value.

\[ \sqrt{x^2 + 4 - 4x} = \sqrt{x^2 - 4x + 4} \]

\[ = \sqrt{(x - 2)^2} = |x - 2| \]

4. Solve the equation

\[ \sqrt{(4 - x)^2} = 5 - 2x \quad \text{since} \quad \sqrt{(4 - x)^2} = |4 - x| \]

Then

\[ |4 - x| = 5 - 2x \]

\[ 4 - x = 5 - 2x \quad \text{or} \quad 4 - x = -(5 - 2x) \]

Solve each

\[ x = 1 \quad \text{or} \quad x = 3 \]

Check solutions: Solution set: \{1\}