

Math Worksheet: Absolute Value(1)

1. Rewrite the following expressions without absolute value.

$$|-2\sqrt{3} + 5/2| =$$

The use of calculator reveals that $-2\sqrt{3} + 5/2$ is negative

hence $|-2\sqrt{3} + \frac{5}{2}| = -(-2\sqrt{3} + \frac{5}{2}) = \underline{2\sqrt{3} - \frac{5}{2}}$

2. Solve the following inequality.

$$|-6 + 4x| \leq 7$$

$$-7 \leq -6 + 4x \leq 7 \Rightarrow -1 \leq 4x \leq 13$$

$$-\frac{1}{4} \leq x \leq \frac{13}{4} \quad \text{solution set: } \underline{\left[-\frac{1}{4}, \frac{13}{4}\right]}$$

3. Simplify the expression using absolute value.

$$\begin{aligned} \sqrt{x^2 + 4 - 4x} &= \sqrt{x^2 - 4x + 4} \\ &= \sqrt{(x - 2)^2} = \underline{|x - 2|} \end{aligned}$$

4. Solve the equation

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

then $|4-x| = 5-2x$

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

Solve each $x = 1$ or $x = 3$

check solutions: solution set: $\underline{\{1\}}$