GUIDED NOTES – 3.6 ABSOLUTE VALUE FUNCTIONS

LEARNING OBJECTIVES
In this section, you will:

- Graph an absolute value function.
- Solve an absolute value equation.

UNDERSTANDING ABSOLUTE VALUE

Study the box in your textbook section titled “absolute value function.”

- The absolute value function can be defined as a piecewise function

\[
f(x) = |x| = \begin{cases} 
  x & \text{if } \ldots \\
  -x & \text{if } \ldots 
\end{cases}
\]

Try It: Read Example 1 in the text, then answer the following.

Students who score within 20 points of 80 will pass a test. Write this as a distance from 80 using absolute value notation.

Homework: You should now be ready to attempt problems 1-5 in “Homework – Section 3.6” on WeBWorK.

GRAPHING AN ABSOLUTE FUNCTION

- The most significant feature of the absolute value graph is the corner point at which the graph changes directions. This point is at the ________________.

Try It: Read Example 2 in the text, then answer the following.

Write the equation for the absolute value function that is horizontally shifted left 2 units, is vertically flipped, and vertically shifted up 3 units.
SOLVING AN ABSOLUTE VALUE EQUATION

Study the box in your textbook section titled “solutions to absolute value equations.”

- For real numbers $A$ and $B$, an equation in the form $|A| = B$ with $B \geq 0$, will have solutions when ________ or ________. The equation $|A| = B$ will not have a solution when ________.

- Write out the 3 step procedure for finding the horizontal intercepts of the graph, given the formula for an absolute value function.

  1. 
  2. 
  3. 

Try It: Read Example 3 in the text, then answer the following.

  For the function $f(x) = |2x - 1| - 3$, find the values of $x$ such that $f(x) = 0$.

Homework: You should now be ready to attempt problems 6-8 in “Homework – Section 3.6” on WeBWorK.