

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

$$f(x) = |x| = \begin{cases} x & \text{if } \underline{\hspace{2cm}} \\ -x & \text{if } \underline{\hspace{2cm}} \end{cases}$$

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.