Exercise 51

For the following exercises, sketch a graph of the given function.

$$f(x) = 4\left[|x - 2| - 6\right]$$

Solution

The parent function is the absolute value function.

$$|x|$$

Replacing x with $x - 2$ shifts the graph to the right by 2 units.

$$|x - 2|$$

Subtracting 6 from this shifts the graph down by 6 units.

$$|x - 2| - 6$$

Multiplying the result by 4 vertically stretches the graph by a factor of 4.

$$4\left[|x - 2| - 6\right]$$