Name: _____ **Date: _____**

Calculus - Mr. Rivera

Quiz - Constructing an Open Box

The 1-by-W cardboard shown below will be used to construct an open box by cutting off its x-by-x corners and folding its remaining creased flanges.

1. Find the governing equation to calculate the volume of the box in terms of x and W.
2. Find the derivative of the governing equation in terms of x and W.
3. Find the value(s) of x in terms of W for which the volume of the box is maximum.
4. Graph the resulting functional *values* of x in terms W, i.e., $f(W)$ for $0 \leq W \leq 1$.

Note: Please review your notes on related problems solved in class.