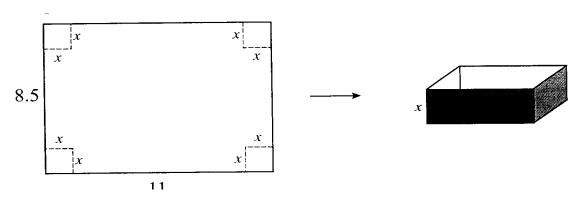**UCONN – Math 1011Q**

The Largest Box

You are going to construct the largest box you can from a sheet of standard 8.5" x 11" notepad back cardboard paper. Ready? Cut identical squares of side length x from each corner, and fold up the sides, like this:

a. Write each side of the box as an expression in x.

b. Express the volume of the box as a function of x. Call it $y = V(x)$.

c. What is the domain of $V(x)$?

d. Calculate the following values of $V(x)$, and use them to graph the function $y = V(x)$ on a separate sheet of paper.

$V(0) =$	$V(1) =$	$V(1.5) =$
$V(2) =$	$V(2.5) =$	$V(3) =$
$V(4) =$	$V(4.25) =$	

e. Use the graph to estimate the largest possible volume of your box. For what x are you going to obtain this biggest box?

Largest Volume =

Obtained at: