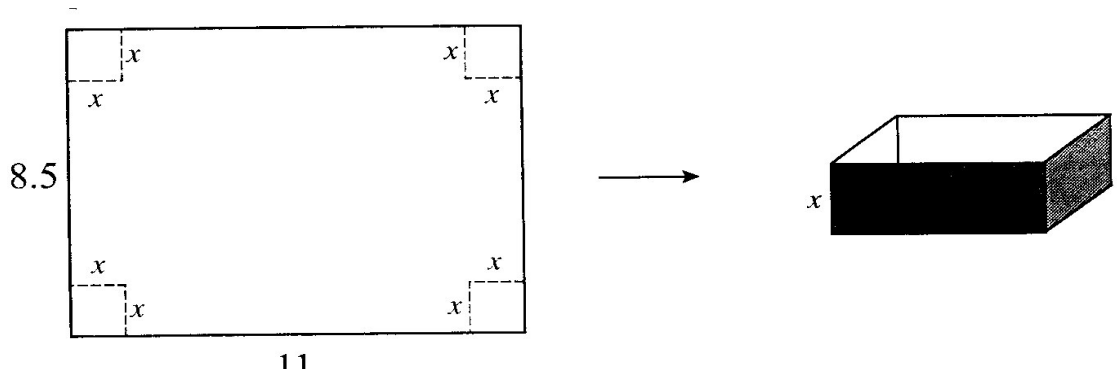
Math 104Q

Group Work on Polynomials: The Largest Box

You are going to construct the largest box you can from a sheet of standard 8.5" x 11" notebook 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 x =