Read the information below before proceeding with the problems that follow.
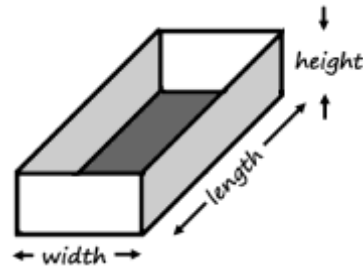
A certain rectangular sheet of cardboard has a length that is 40 inches and a width that is 25 inches.
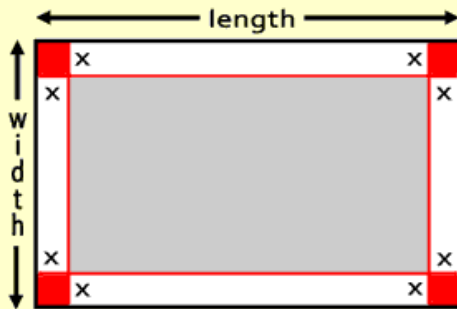
Square corners are removed from the cardboard sheet. Then, the sheet is folded along its edges to form an open box, as is pictured below.

Exercises:

1) Write expressions that define the open box's dimensions using the variable 'x.'

length	width	height

2) Use the dimensions defined from problem #1 to write a function for the volume of this open box.

V =

3) Graph the volume function from problem #1. What are all the x-values that are acceptable for the open box?

Domain:

4) Use the volume from problem #2 to determine the maximum volume of the open box. How large should the squares be to make the maximum volume?

Maximum volume:

Dimensions of the Squares: