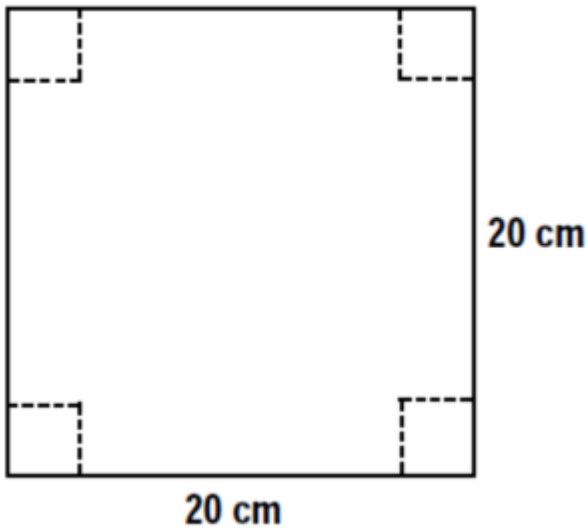


Volume Activity

1. Construct a 20 cm by 20 cm square on the white piece of paper.
2. Draw four congruent squares in each corner of your original square (see diagram below), the size of the four squares you draw will be assigned for your group.
3. Using the scissors and tape, cut out your square and its corners to create an open-topped box.



4. Complete the following questions:
 - a. The width of our box is:
 - b. The length of our box is:
 - c. The height of our box is:
 - d. Calculate the volume of your box.

A summary of the data collected from the class is on the board. Copy this data into the chart below.

Height (cm)	Volume (cubic cm)
0	0
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	0

6. What is the maximum volume? (According to your graph.)
7. What size of square cut out of the corner would result in the maximum volume?
8. What type of function models your graph?
9. Could we write a mathematical function representing the graph?
10. How could our knowledge of derivatives be used to find the maximum volume?