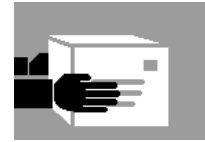
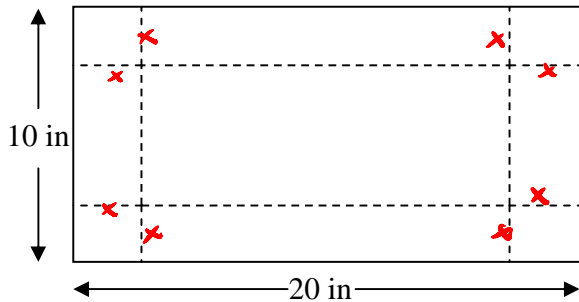


Name: Dimarco Name: _____ Period: _____



VOLUME OF A BOX

An open box is formed by cutting squares from the corners of a regular piece of cardboard (see diagram) and folding up the flaps.



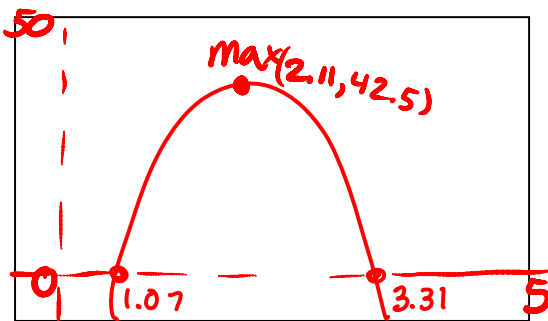
Volume = length x width x height

$$V = (20 - 2x)(10 - 2x)x$$

- 1) What size corner squares should be cut to yield a box with volume EQUAL TO 150 cubic inches?

$y = (20 - 2x)(10 - 2x)x - 150$

Choose a good window and draw what you see:



$x = 1.07 \text{ in or } 3.31 \text{ in}$

- 2) What size corners should be cut to yield a box with a volume more than 150 cubic inches? (answer in interval notation)

$$(1.07, 3.31)$$

- 3) What is the maximum volume possible for the box, and what size corners should be cut to create that volume? Explain how you got your answer.

Find max and add 150

Cut 2.11 in
Vol 192.5 in³