

Volume of an Open Box: Dynamic

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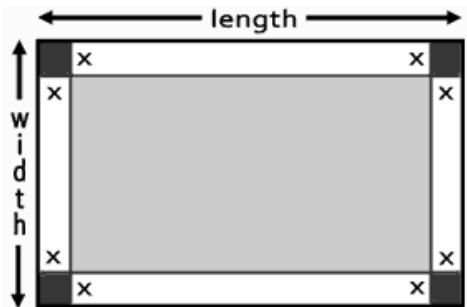
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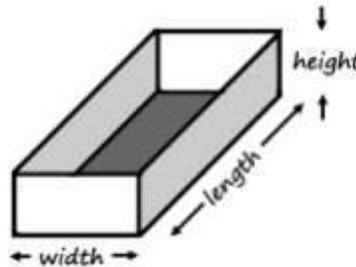
Watch this video: <https://youtu.be/5KHexV-XH7o>.

Next, go to <http://www.mathguide.com/cgi-bin/quizmasters2/PMob.cgi> to gain your individual problem.

A certain rectangular sheet of cardboard has a length that is ___ inches and a width that is ___ inches.



Square corners are removed from the cardboard sheet. Then, the sheet is folded upward 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.
- 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:

Size of the Squares: