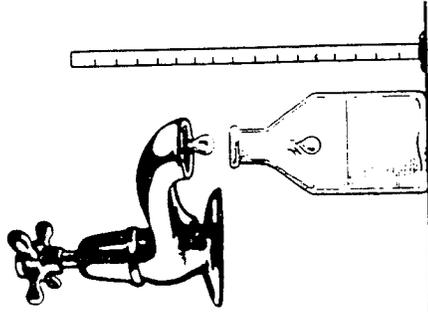


Introductory Assignment

Due on Monday, September 27, 2004

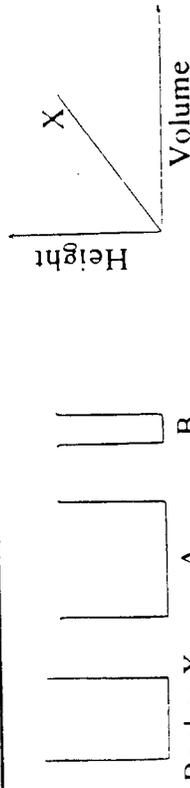
Instructions: Do this assignment on your own and then get together with someone else in the course and compare your results. Try to arrive at a consensus and be able to support your conclusions by reasoning (in straightforward English). Each person must turn in his or her own assignment. Put your name at the top of your paper, and please put the name of your collaborator at the bottom of your paper.



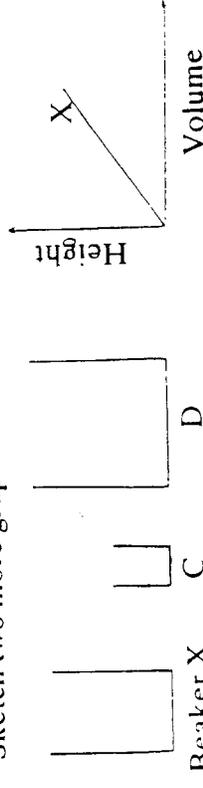
Filling Bottles

In order to calibrate a bottle so that it may be used to measure liquids, it is necessary to know how the height of the liquid depends upon the volume in the bottle.

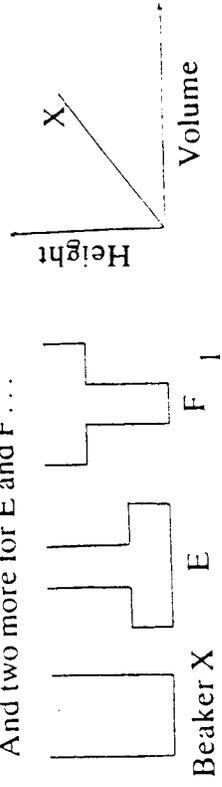
The graph below shows how the height of liquid in beaker X varies as water is steadily dripped into it. Copy the graph, and *on the same diagram*, show the height-volume relationship for beakers A and B.



Sketch two more graphs for C and D...



And two more for E and F...

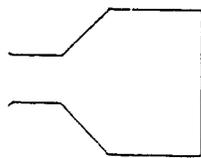


Here are 6 bottles and 9 graphs.

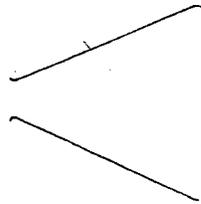
Choose the correct graph for each bottle.

Explain your reasoning clearly.

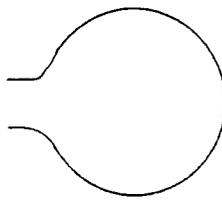
For the remaining 3 graphs, sketch what the bottles should look like.



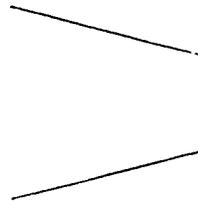
Ink bottle



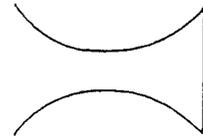
Conical flask



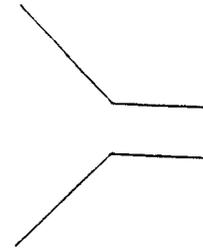
Evaporating flask



Bucket



Vase



Plugged funnel

