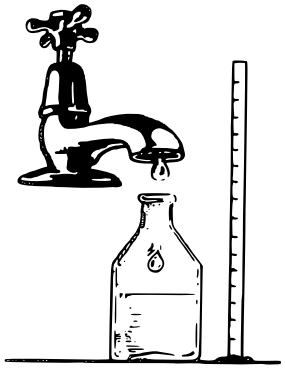
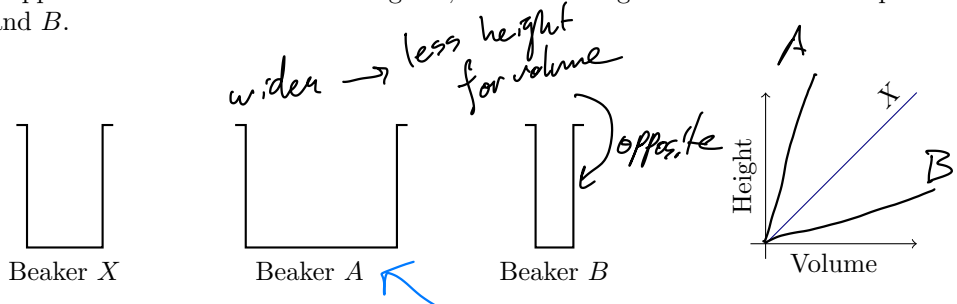


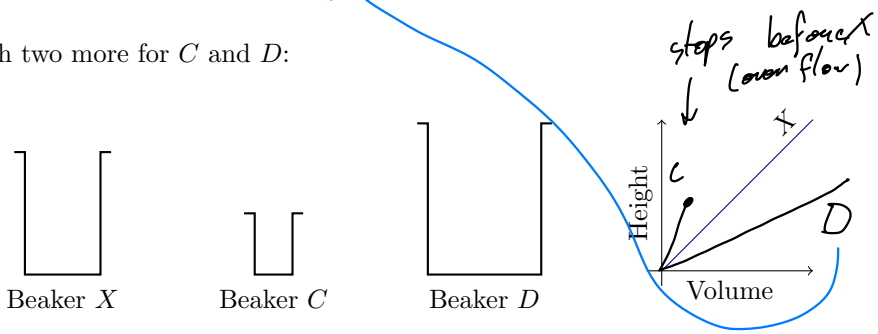
Filling Bottles

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 on the volume in the bottle.

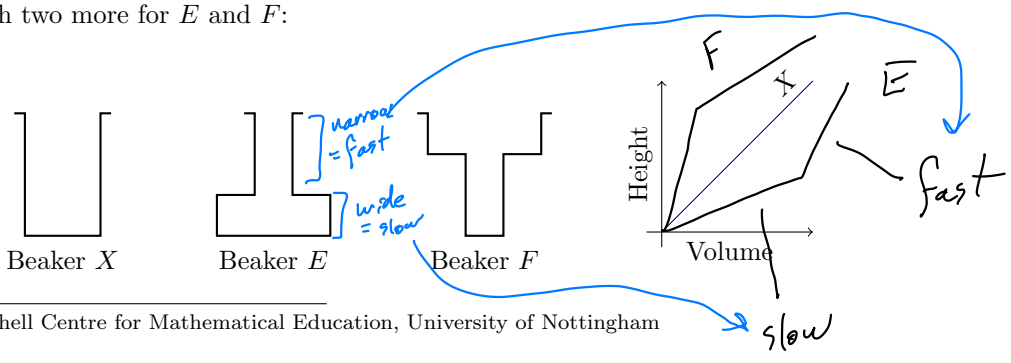
1. The graph below shows how the height of the liquid in beaker X varies as water is steadily dripped into it. On the same diagram, show the height-volume relationship for beakers A and B.



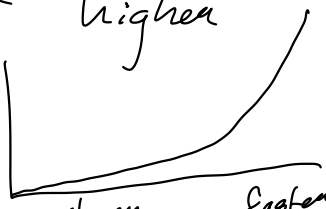
2. Sketch two more for C and D:



3. Sketch two more for E and F:



slant in: faster at higher volume



4. Here are six bottles and nine graphs. Choose the correct graph for each bottle. Explain your reasoning clearly. For the remaining three graphs, sketch what the bottles should look like.

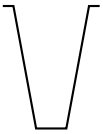
Ink bottle

Conical Flask

D

Evaporating flask

H



Bucket

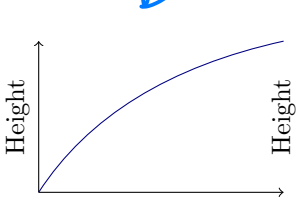
A

Vase

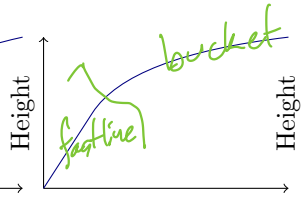
E

Plugged funnel

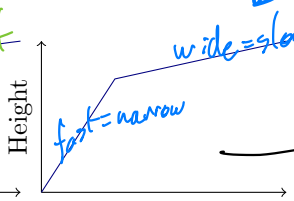
B



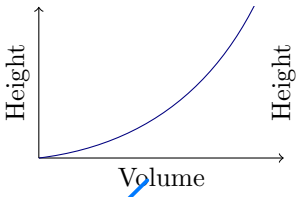
(a)



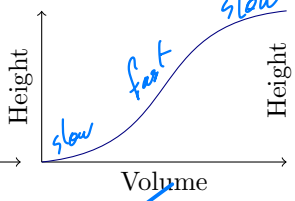
(b)



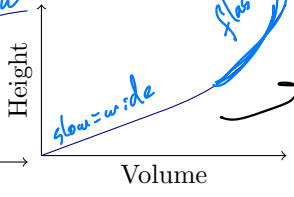
(c)



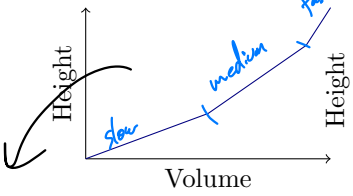
(d)



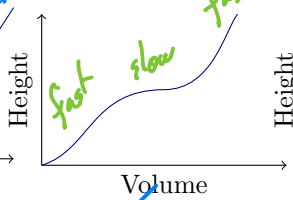
(e)



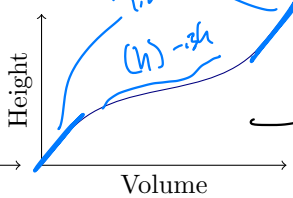
(f)



(g)



(h)



(i)