

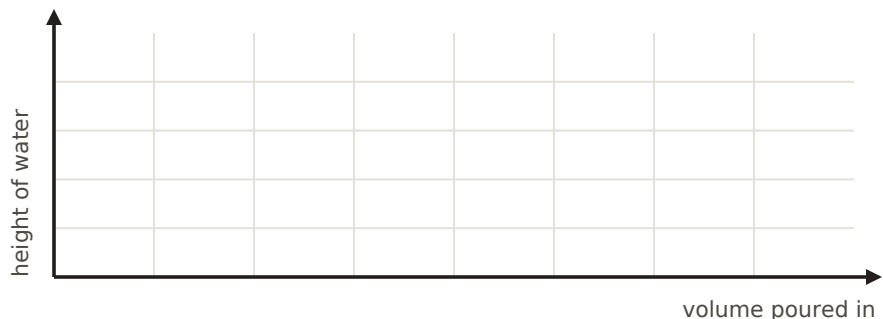
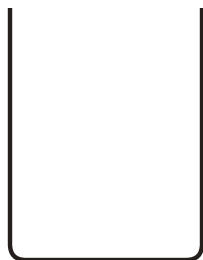
The bottle problem

Water is poured into each container at a steady rate.

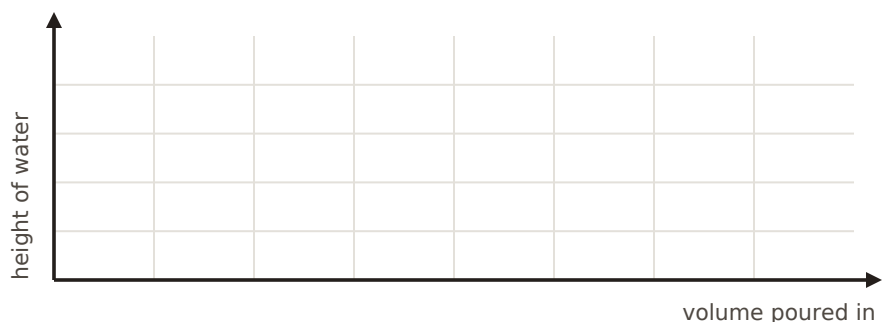
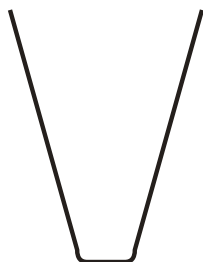
Sketch the height of the water as a function of the volume poured in.

No formulas and no calculation — just the shape of the graph, and be ready to say why.

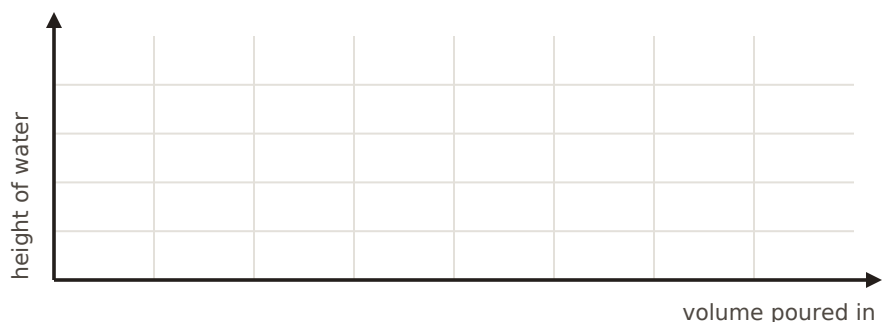
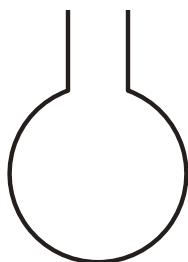
A



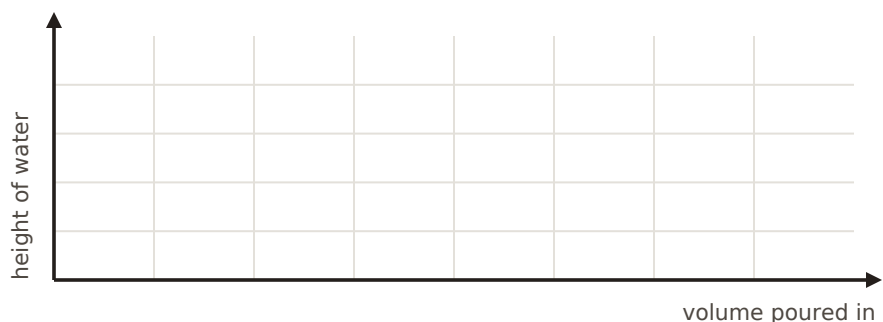
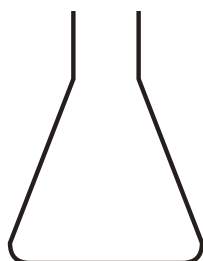
B



C



D



When you have all four:

1. One of your graphs is a straight line. Which one, and why is it the only one?
2. For C, where is your graph steepest? Say why in one sentence.
3. Two of your graphs bend in opposite directions. Which two, and what is the difference between the containers that causes it?