

Practical 1 Questions

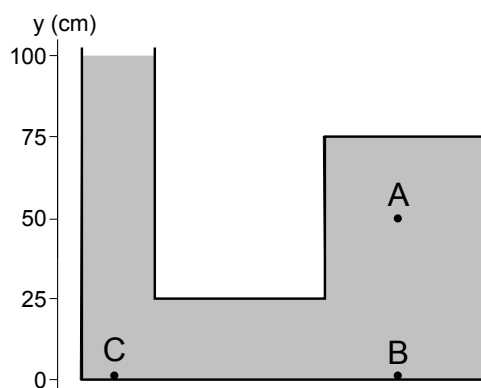
1. Imagine that you are in a boat, floating on a small pond. In the bottom of the boat is a rock. You pick up the rock, and throw it overboard, into the water.

Does the water level in the pond rise, fall, or stay the same?

2. The container shown in the figure is filled with oil (density 900 kg/m^3). It is open to the atmosphere on the left (Atmospheric pressure is 101.3 kPa).

(a) What is the pressure (in kPa) at point A?

(b) What is the pressure difference between points A and B? Between points A and C?



3. We are trying to lift a load of mass M using helium filled balloon. If the radius of the He balloon is 10 m , what is the maximum load M this balloon can lift? The density of air is 1.25 kg/m^3 and the density of helium is 0.16 kg/m^3 . Ignore the volume of the load, which is much smaller than the volume of the balloon.