3 **(a)** Fig 3.1 below shows a closed symmetrical jar with dimensions as shown. It contains a liquid of mass 3.0 kg and density 900 kg m^{-3}. The liquid exerts a pressure on the base of the jar.

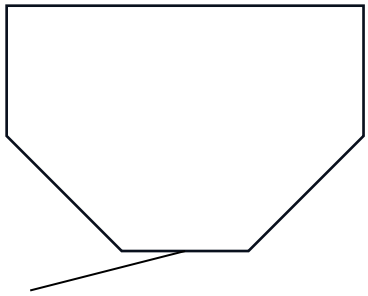

Fig. 3.1

3.0 cm

3.0 cm

Area of base 9.0 cm^2

Determine the pressure exerted by the liquid at the base of the jar.

pressure = …… Pa [2]

(b) Fig 3.2 below shows an object that is not in equilibrium partially submerged in water.

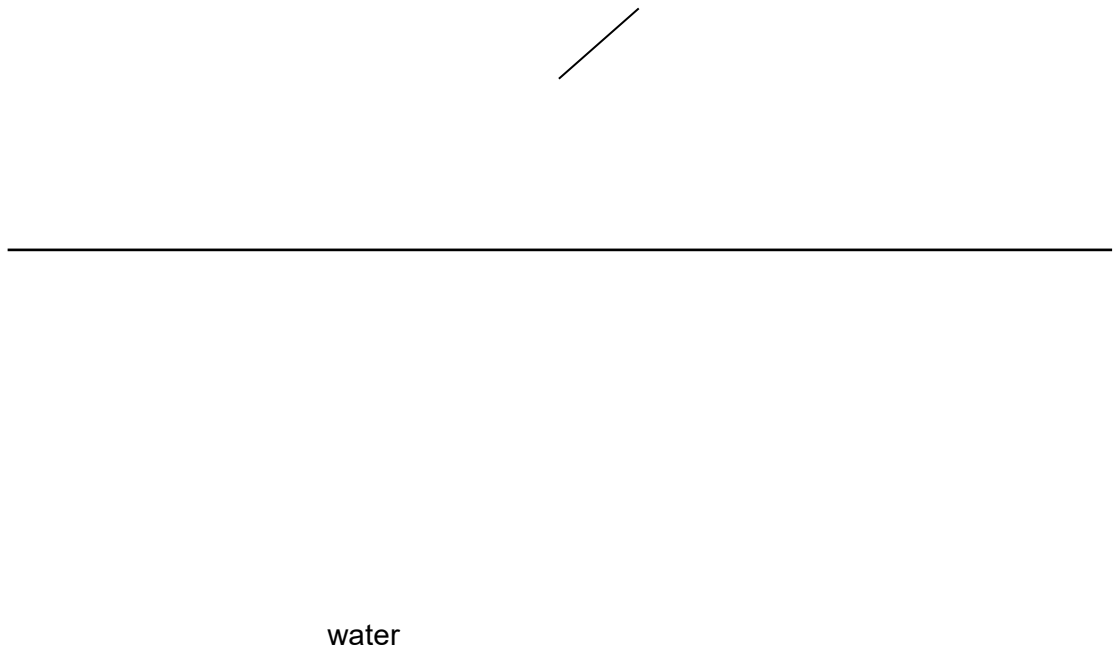

Fig 3.2

The density of the object is uniform and is less than the density of water.

By drawing the weight of the object *W* and the upthrust *U* acting on the object on Fig. 3.2, describe briefly what will happen to the object and suggest its approximate position after it comes to equilibrium.

……
……..

……
……..

……
…… [2]

[Total: 4 marks]