3 Liquids are difficult to compress whereas gases can be compressed easily.

(a) Explain, in terms of particles, why it is difficult to compress liquids.

.....

.....

..... [2]

(b) Fig. 3.1 shows a rectangular block floating in water. The density of the water is 1000 kg / m^3.

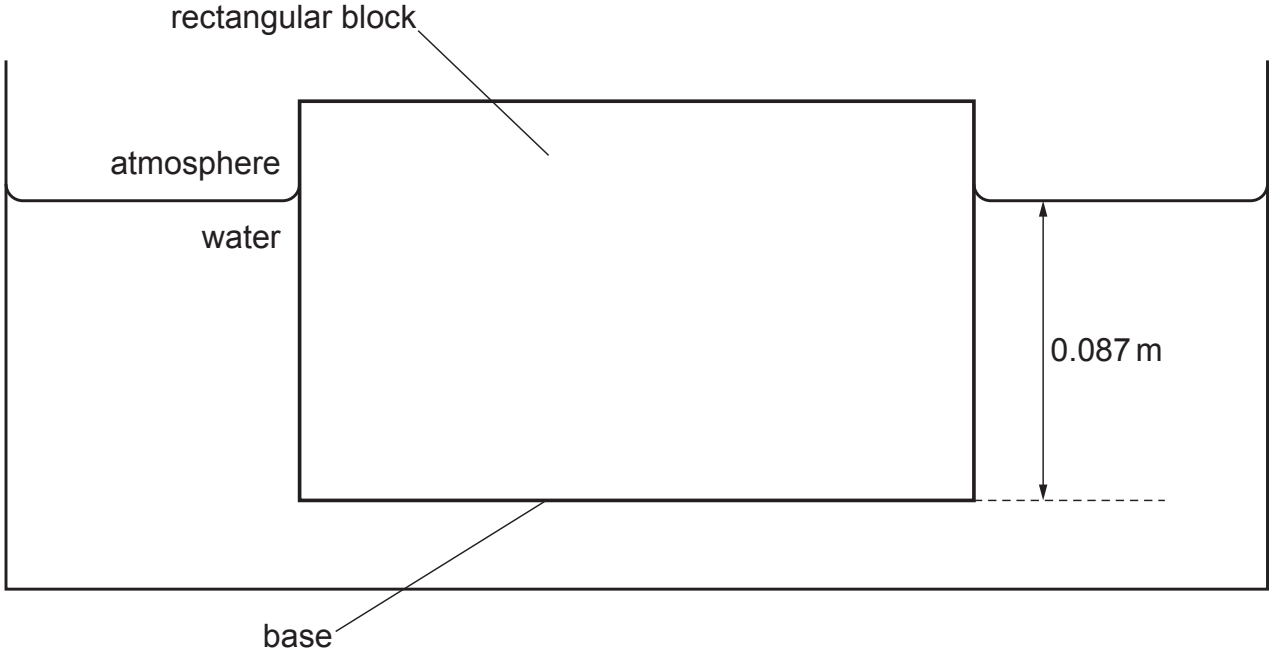

Fig. 3.1

The area of the base of the block is 0.014 m^2. The base of the block is at a depth of 0.087 m below the surface of the water.

(i) Show that the pressure due to the water at the base of the block is approximately 850 Pa.

[2]

(ii) Calculate the force *F* on the base of the block caused by the pressure given in **(b)(i)**.

F = ... [2]

(iii) Force *F* is equal to the weight of the block.

Calculate the mass of the block.

mass = ... [2]

[Total: 8]