1. 0625/42/O/N/19/No.1

Fig. 1.1 is the top view of a rectangular paddling pool of constant depth. The pool is filled with sea water.
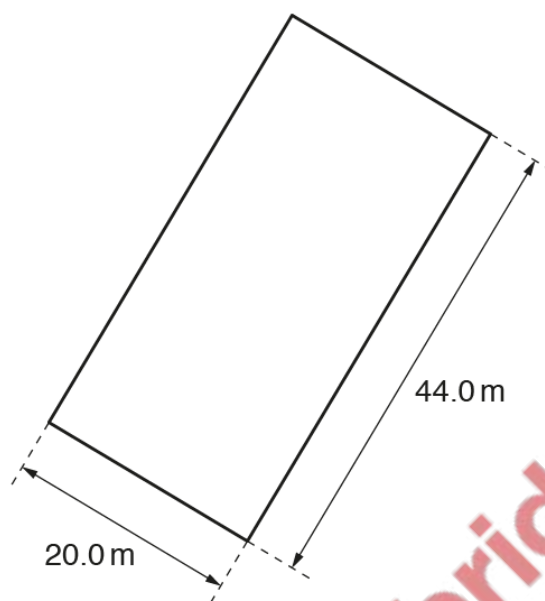

Fig. 1.1 (not to scale)

(a) The volume of the sea water in the pool is $264 \, m^3$.

Calculate the depth of the pool.

depth = ... [3]

(b) The mass of the sea water in the pool is 2.70×10^5 kg.
Calculate the density of the sea water. Give your answer to 3 significant figures.

density = ... [2]

(c) Calculate the pressure due to the sea water at the bottom of the pool.

pressure = ... [2]

(d) State a suitable instrument for measuring the dimensions given in Fig. 1.1.

.... [1]
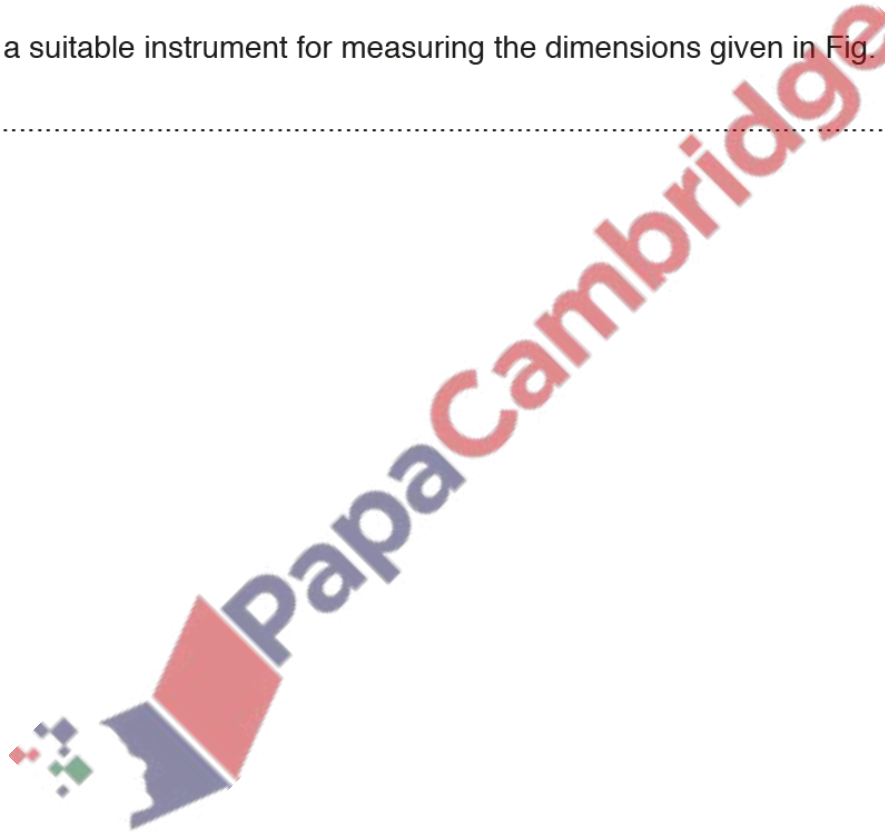
[Total: 8]

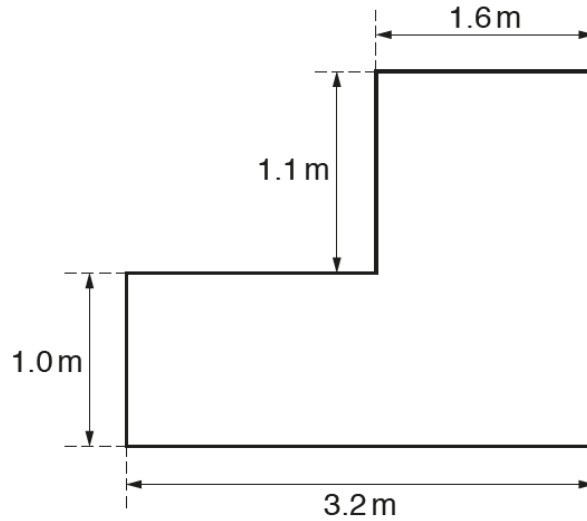Fig. 1.1 is the top view of a tank in an aquarium. The tank is filled with salt water.

Fig. 1.1 (not to scale)

The depth of the water in the tank is 2.0 m.

(a) Calculate the volume of the water in the tank.

volume = ... [3]

(b) The density of the water in the tank is $1.1 \times 10^3 \, kg/m^3$.

Calculate the mass of the water in the tank.

mass = ... [2]

3

(c) Calculate the pressure due to the water at a level of 0.80 m above the base of the tank.

pressure = ... [3]

[Total: 8]