33. All the sides of a plastic cube are 8.0 cm long. Fig. 3.1 shows the cube.

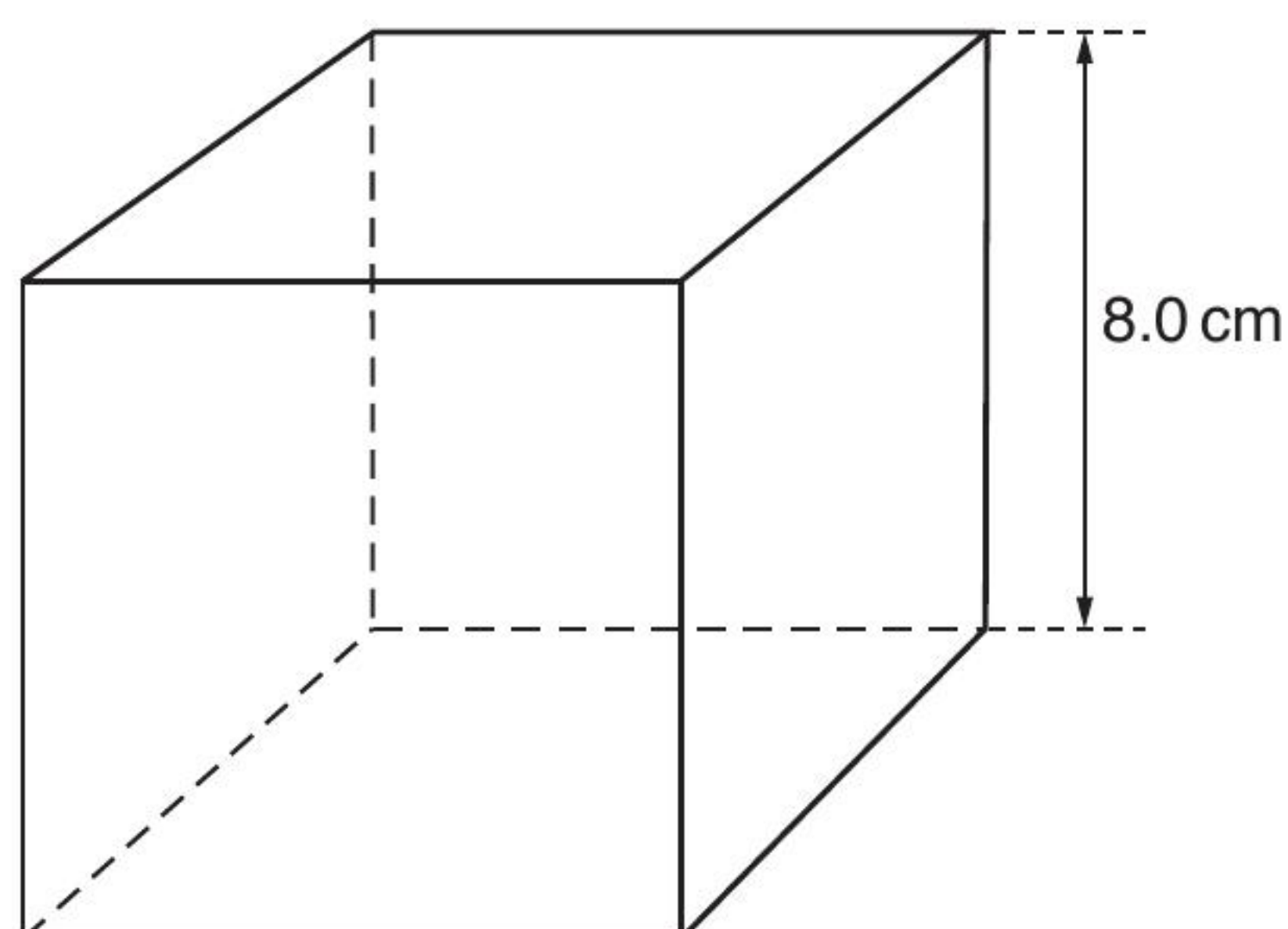
8.0 cm

Fig. 3.1 (not to scale)

The mass of the cube is 0.44 kg.

(a) Explain what is meant by *mass*.

....[1]

(b) (i) Calculate the density of the plastic from which the cube is made.

density = ...[2]

(ii) The density of one type of oil is 850 kg/m^3.

State and explain whether the cube floats or sinks when placed in a container of this oil.

....

....[1]

(c) On the Moon, the weight of the cube is 0.70 N.

(i) Calculate the gravitational field strength on the Moon.

gravitational field strength = ...[2]