1   (a) The diameter d of a cylinder is measured as 0.0125 m ± 1.6%.

Calculate the absolute uncertainty in this measurement.

absolute uncertainty = ... m [1]

(b) The cylinder in (a) stands on a horizontal surface. The pressure p exerted on the surface by the cylinder is given by

$$p = \frac{4W}{\pi d^2}.$$

The measured weight W of the cylinder is 0.38 N ± 2.8%.

(i)   Calculate the pressure p.

p = ... N m^{-2} [1]

(ii) Determine the absolute uncertainty in the value of p.

absolute uncertainty = ... N m^{-2} [2]

[Total: 4]