

Estimating and Handling Uncertainties in the Laboratory

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1 Practice problem

In a lab you measure the mass and size of a small metal cylinder. Using a digital scale, you measure its mass to be 19.6 g, and using calipers you find the diameter to be 3.8 cm and the height to be 4.2 cm. The resolution of the digital scale is 0.1 gram, and the caliper you use to measure the diameter and height of the cylinder has a resolution of 0.2 mm.

Calculate the density and its uncertainty for the cylinder.