

## Experimental Physics

Homework 3: Due April 22.

1. The density,  $\rho$ , of an object is given by  $\rho = M/V$ , where  $M$  = mass and  $V$  = volume. You have a sphere of diameter 3.0000cm with a  $\sigma_d = 0.010$ cm and a mass of 0.40000kg with a  $\sigma_m = 0.2$ g. (Watch the units!) Find the density and the standard deviation of the density. Write it as

$$\rho \pm \sigma_\rho$$

That is the value of the density  $\pm$  its standard deviation. **Include the units and use the proper number of significant figures!**