

Prelab Questions

Lab 1

Linear Accelerated Motion

First Name: _____

Last Name: _____

Student ID: _____

1. Suppose that we measure the mass m of an object and its velocity v . The uncertainty in mass measurement is $\delta m = 0.1$ kg and the uncertainty in velocity measurement is $\delta v = 0.3$ m/s. What is the uncertainty in the kinetic energy $K = \frac{1}{2}mv^2$?
2. Determine the density, and its uncertainty, of a rectangular prism made of wood. Dimensions of the prism (length L , width W , height H) and mass M were measured. Results of the measurements are summarized below

$$L = 89 \pm 1 \text{ mm} \tag{1}$$

$$W = 56 \pm 1 \text{ mm} \tag{2}$$

$$H = 151 \pm 1 \text{ mm} \tag{3}$$

$$M = 741 \pm 5 \text{ g} \tag{4}$$

To determine the uncertainty of the density, follow the procedure explained in the lab manual in the section devoted to uncertainties.