MM2 – Chapter 15 – Section 7

Pre-Class Question:

1. A ball is falling to the ground with the falling data:
   a. $m = 0.1\ kg\ \pm 0.01\ kg$
   b. $v = 1\frac{m}{s} \pm 0.01\frac{m}{s}$
   c. $z = 2m\ \pm 0.01\ m$

   What is the total energy of the system? Give Uncertainty.

Class Worksheet

1. Prove:

$$var\ (w) = \sigma_w^2 = \langle (w - \overline{w})^2 \rangle = \sqrt{\sigma_p^2 + \sigma_q^2}$$

   Where

$$\sigma_p = \frac{\partial w}{\partial p}\ \Delta p$$

2. If

$$x_1 = 35\ \pm 5$$
$$x_2 = 25 \pm 7$$

   Find:
   a. $x_1 + x_2$
   b. $x_1\ x_2^3$