PHYS 391 - Day 7

New Groups!

The Letter of the Day: T

- First person at T or after is Reporter

- Next person is Leader

Weighted Average

- Each measurement has a weight, based on error

$$w_i = \frac{1}{\delta x_i^2}$$

- Weighted mean

$$x_{\mathrm{wav}} = \frac{\sum w_i x_i}{\sum w_i}$$

- Uncertainty

$$\sigma_{\mathrm{wav}} = \frac{1}{\sqrt{\sum w_i}}$$

Question for the Day

- Find the weighted average of these three measurements

$$x_1 = 6 \pm 2$$
$$x_2 = 4 \pm 1$$
$$x_3 = 2 \pm 1$$

- What is the uncertainty on your weighted average?