PHYS 391 - Day 7
New Groups!

- 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

\[ x_{\text{wav}} = \frac{\sum w_i x_i}{\sum w_i} \]

• Uncertainty

\[ \sigma_{\text{wav}} = \frac{1}{\sqrt{\sum w_i}} \]
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?