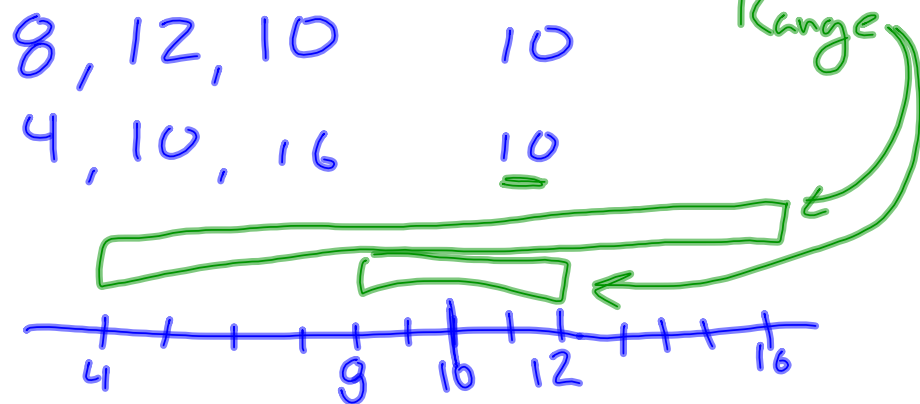


What do we need to achieve our Goals

- | | |
|--------------------|---|
| Organization | Be interested |
| Clear Expectations | Be interesting |
| Clarity | Take care of self
Clear head
Stay focused |
| Come to class | |
| Practice | |
| AP specific work | |
| Ask for help | } |
| Provide help | |

Uncertainty



Uncertainty of a measurement is $\frac{1}{2}$ the smallest increment

Uncertainty of Averages

- 1) Find the average of the data $342, 356, 324, 330$
 338
- 2) Find the range (max-min) $356 - 324 = 32$
- 3) Divide range by 2 $32/2 = 16$
- 4) Round uncertainty to 1 sig fig 338 ± 16 $\leftarrow \begin{matrix} 20 \\ 10 \end{matrix}$
 338 ± 20
- 5) Match the decimal place of the average to that of the uncertainty. $\boxed{340 \pm 20}$

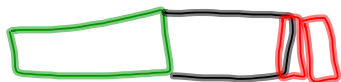
example $423, 487, 461$ 460 ± 30

Adding and Subtracting with Uncertainties

Add the absolute Value of the Uncertainties

$$3.25 \text{ m} \pm 0.05 \text{ m}$$

$$2.97 \text{ m} \pm 0.02 \text{ m}$$



$$6.22 \pm 0.07$$