Adrian deCola 9/10/21

Lab 0 Part C

2.5 iii, x, xv obey

i) Too many sig figs in error
ii) Decimal places don't match
iii) OBEYS
iv) No units
v) Too many sig figs in error
vi) Too many sig. figs in error
vii) Decimal places don't match
viii) Too many sig. figs in error
ix) Decimal places don't match
x) OBEYS
xi) Too many sig figs in error
xii) Too many sig. figs in error
xiii) Too many sig. figs in error
xiv) Decimal places don't match
xv) OBEYS

3.6 $\text{mean} = \frac{1}{N}\sum_{i}^{N} T_i = 50.74\,\mu C$

$\sigma = \sqrt{\frac{\sum (x_i - \bar{x})^2}{N}} = 5.35\,\mu C$

Should I bother w/ N-1

$z = \frac{62.1 - 50.74}{5.35} \approx 2.12$

That's a lot of standard deviations from the mean — let's drop it.

$\bar{x} = \frac{1}{N}\sum_{i}^{N} x_i = 48.85\,\mu C$

$\sigma = \sqrt{\frac{\sum x_i^2}{N}} - \bar{x}^2 = 2.88\,\mu C$

$\bar{x} = 49 \pm 2\,\mu C$

$\cdot 10^8 \frac{m}{s}$

2.97 ± 0

4.10 $3.03 \pm .04$, $2.99 \pm .03$, $2.99 \pm .02$, $3.0 \pm .05$, $3.0 \pm .04$

$a = \frac{\sum \frac{a_i}{\sigma_i^2}}{\sum \frac{1}{\sigma_i^2}} = 2.99$

$\sigma = \left(\sum \frac{1}{\sigma_i^2} \right)^{-\frac{1}{2}} = .01$

$(2.99 \pm .01) 10^8 m/s$

Pt 2. Adding 3.0 ± 0 $3 \cdot 10^8 m/s$

$a = 2.99$

$\sigma = .01$

The result doesn't change.

Pt 3. Adding $4.0 \pm .01 \cdot 10^8 m/s$

$a = 3.56$

$\sigma = 0.01$

$(3.56 \pm 0.01) \cdot 10^8 m/s$