

Uncertainty Worksheet**Name:** _____

You will receive either a 100% or a zero for this assignment. Only perfect worksheets will be accepted. If your worksheet is not perfect, you will be permitted to retry a similar assignment for reduced credit.

1. Complete the following table.

Measured Value	Uncertainty (Error)	How to write in abstract
9.81254078 m/s	0.25201 m/s	9.81 ± 0.25 m/s
2781.124 mm	32.94 mm	
6.623920×10^{-7} N m ² /kg ²	4.43394×10^{-9} N m ² /kg ²	
0.0005392 kg	0.000002681 kg	
3548.833 g	72.42 g	
19.321 s	3.747×10^{-3} s	

2. Do Jill's measurements agree with Jack's value within 1 standard deviation, 2 standard deviations, or not at all?

Jill's value	Jack's value	Agree (1, 2, or N)?
8.31 ± 0.41 s	7.92 s	
$(25.895 \pm 0.182) \times 10^{-13}$ m	26.241×10^{-13} m	
0.06321 ± 0.00052 kg	0.06211 kg	
4733 ± 94 N	4821 N	

3. 5 people make the following measurements for the length of a street: 513.2 m, 517.8 m, 508.1 m, 507.4 m, and 516.7 m. For each part, make sure you include the appropriate unit.

- What is the "best value" for the length of the street?
- What is the uncertainty for this group of measurements?
- Using your results to parts (a) and (b), write the length of the street in the appropriate format.