

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
5381.733 mm	26.64 mm	
5.624220×10^{-5} N m ² /kg ²	3.82194×10^{-7} N m ² /kg ²	
0.0006834 kg	0.000001752 kg	
7824.616 g	53.89 g	
39.456 s	5.718×10^{-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)?
7.84 ± 0.26 s	8.05 s	
$(37.742 \pm 0.081) \times 10^{-13}$ m	37.682×10^{-13} m	
0.09237 ± 0.00031 kg	0.09166 kg	
8389 ± 16 N	8418 N	

3. 5 people make the following measurements for the length of a street: 621.9 m, 634.2 m, 625.6 m, 617.8 m, and 627.7 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.