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
8177.543 mm	63.71 mm	
6.836740×10^{-23} N m^2/kg^2	3.68453×10^{-25} N m^2/kg^2	
0.00003875 kg	0.0000006279 kg	
2119.631 g	18.53 g	
48.331 s	2.992×10^{-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)?**
4.87 ± 0.32 s	5.46 s	
$(23.508 \pm 0.038) \times 10^{-13}$ m	23.474×10^{-13} m	
0.04601 ± 0.00034 kg	0.04527 kg	
3026 ± 19 N	2991 N	

3. 5 people make the following measurements for the length of a street: 433.9 m, 425.2 m, 452.1 m, 439.4 m, and 428.7 m. For each part, make sure you include the appropriate unit.

(a) What is the "best value" for the length of the street?

(b) What is the uncertainty for this group of measurements?

(c) Using your results to parts (a) and (b), write the length of the street in the appropriate format.