

PHYS 500
HANDOUT 5

1. In an experiment we measured the speed of an object with 5 different methods and we got the following results with their corresponding errors:

Measured Velocity (m/s)	4.21	4.19	4.16	4.20	4.17
Relevant error (m/s)	0.02	0.04	0.02	0.01	0.01

(a) Find the value of the speed, which we must accept after these five different experiments

(b) Find the error of the speed, which we must accept after these five different experiments.

(c) Quote the final result.

2. In an experiment to measure the period of a pendulum we got the following recordings (in s): 2.5, 2.9, 2.3, 2.6, 1.8, 2.4. The result 1.8 seems to be far away than the other results. Decide if you are going to keep it or to drop it.

3. We bought a rod for our lab. We did 5 measurement for it length:

Measured length (cm)	10.21	10.19	10.16	10.20	10.17
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a) Find the average length and the error of the average value.

b) The manufacturer gives an error $\delta l_{man} = 0.005 \text{ cm}$ while we have a reading error equal to $\delta l_{man} = 0.01 \text{ cm}$. Quote the correct result for the length of the rod.