PHY153:
Homework1: 4 problems DUE Sept 5 (THURSDAY)
Please bring hardcopies / printouts to class.

HW1 problem1:

Consider the following set of data (average temperature in January in NY):
http://www.weather.gov/media/okx/Climate/CentralPark/monthlyannualtemp.pdf

Use the following average temperatures (N=60) in January (subset of existing data):

temperature=[38.0, 34.5, 29.9, 28.6, 35.1, 37.3, 29.7, 32.5, 27.9, 36.5, 37.5, 40.9, 31.3, 24.7, 27.5, 39.9, 33.6, 31.3, 33.9, 40.0, 32.2, 30.5, 37.5, 25.6, 36.3, 35.7, 34.9, 41.4, 37.4, 29.5, 32.3, 34.1, 28.8, 29.9, 34.5, 26.1, 26.3, 33.7, 33.6, 28.0, 22.1, 27.4, 37.3, 35.3, 35.5, 35.1, 27.0, 25.1, 31.8, 26.7, 37.4, 32.2, 29.7, 35.7, 30.1, 32.6, 27.7, 33.9, 31.1, 31.9]

a) Find the range of data.
b) Decide what are the best values to use for the range of a histogram.
c) Decide what are the best values to use for the number of bins.
d) Draw a histogram (on paper)

e)What is the best estimate of January temperature and its uncertainty?
f)What is a single temperature measurement's uncertainty (standard deviation) based on the collected data?

Homework1: Problem2

A. (1.9 +/- 0.189) [m]
B. (1.89999679) +/- 0.189 [m]
C. (1.90 +/- 0.19) [m]
D. (1.9 +/- 0.2) [m]

E. (23.24555 +/- 2.234) [m]
F. (23.2 +/- 2.2) [m]
G. (23 +/- 2) [m]

H. (0.00012378 +/- 0.00000568) [m]
I. (0.0001238 +/- 0.0000057) [m]
J. (0.000124 +/- 0.000006) [m]
K. $(1.24 +/- 0.06)x10^{-4}$ [m]

Which are correct and which are incorrect? Round properly incorrect ones.

Homework1: Problems 2.3 and 2.4 (Section 2, Taylor textbook).