

Engineering Statistics I Homework

Work these problems in class during a time determined by your professor, who will assist as needed. Continue to work on the problems as a homework and submit them in canvas. Use excel on this homework.

1. Determine the mean and standard deviation of the following five numbers, in meters: 3.0,6.0,2.0,5.0,5.0. Use DATA/Text to Columns to import into Excel.
2. Create a column chart with \pm one standard deviation error bars for the samples shown in Table 1.

Table 1: Strength of Materials A and B

Material	Mean (Pa)	Standard Deviation (Pa)
A	50	10
B	60	20

3. Create a scatter chart with Voltage on the x-axis, Power on the primary y-axis, and Speed on the secondary y-axis using the data in Table 2. Fit a linear regression to Speed regressed on Voltage. Fit a power regression to Power regressed on Voltage. It is a coincidence that 'Power' in Watts follows a 'power' relationship ($Y = aX^b$) in this example.

Table 2: Chattanooga Train Powered by Train Set Power Pack

Voltage (V)	Speed (cm/s)	Power (W)
3.4	7.8	0.54
5.1	14.3	0.97
6.6	19.8	1.45
7.8	24.8	1.87
9.1	29.5	2.46
10.3	33.9	2.88
11.7	38.9	3.63
13.1	44	4.32
14	46.3	4.9