Homework 1

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Q: 1. For each dataset, calculate and report the mean and standard deviation (use mean.m, std.m)

A:

2. For each dataset, calculate and report the median, mode, IQR, skewness, and kurtosis.

3. For each dataset, use the boxplot.m function to create a notched boxplot.

4. Using the hist.m function, create a histogram of each dataset, using 30 bins.

5. Using the subplot.m function, create one figure showing all 4 plots from above.

6. Use the axis.m function to set the axis limits to the same range of values for all 4 plots.

7. A more useful histogram is a relative density histogram, which is normalized such that the area of the histogram is equal to 1. Using the hist function, calculate the histogram, normalize it, and plot the relative density histogram for each dataset using the bar function.

8. The Gaussian (normal) distribution has the form



for mean  and standard deviation . Using your calculated mean and standard deviation from above, calculate the normal distribution curve and plot it with a thick red line on your relative density histograms above.

9. What is the probability of a new measurement at each site being within 20cm of the average value?

10. What is the probability of a new measurement at each site being at least 20cm larger than the average value?

11. What is the probability of a new measurement at each site being at least 20cm smaller than the average value?

This is my [homework](https://docs.google.com/document/d/1QlyZn8inBEG0xrLs1kF0bAGrCfTQCzP9cDNW_-vB7z4/edit?usp=sharing).