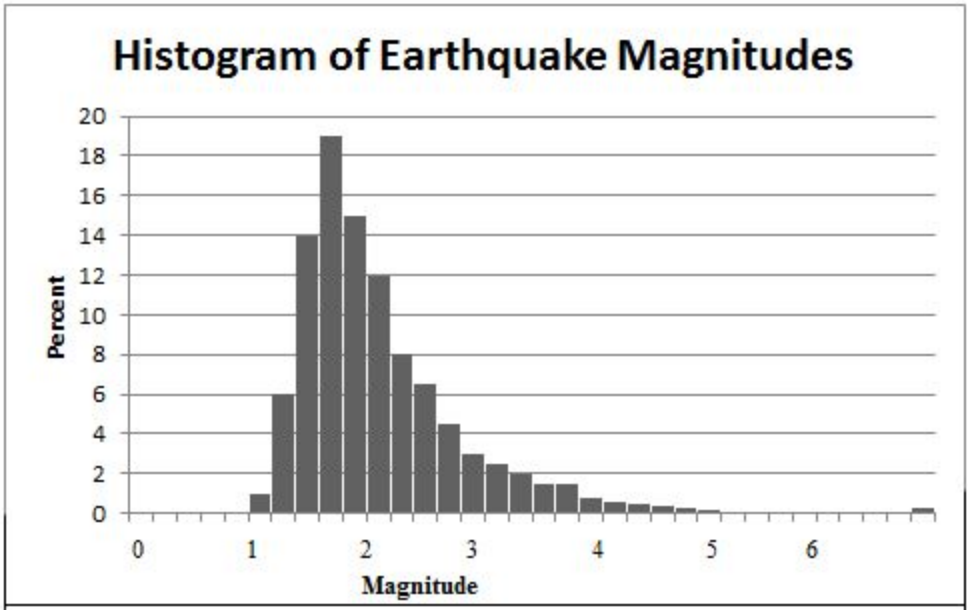
Assignment 1

1. (3pts) Define the following terms: mean, median, variance, standard deviation, and standard error.

2. (1pt) What is population and what is sample in the practice of statistics?

3. (1pt) From the histogram, what can you say about this distribution?



4. (2pts) What is the difference between cross sectional data and panel data?

5. (1pt) Given the snapshot of this dataset, what type of data is it?

Month	Monthly Milk Production: lbs / cow
1962-01	578.3
1962-02	609.8
1962-03	628.4
1962-04	665.6
1962-05	713.8
1962-06	707.2
1962-07	628.4
1962-08	588.1
1962-09	576.3
1962-10	566.5
1962-11	561.1
1962-12	571.4
1963-01	589.1
1963-02	615.3
1963-03	641.2
1963-04	682.8
1963-05	728.5
1963-06	726.4
1963-07	648
1963-08	605.8
1963-09	591.5
1963-10	576.3
1963-11	573.2
1963-12	587.1

6. (4pts) The highly volatile stock with symbol MBA has realized the following daily returns (in percentage points): -0.5, 1.5, 2.5, 1.5, -0.5, 1.5.

a. (1pt) Compute the sample mean.
b. (1pt) Compute the sample median.
c. (1pt) Compute the sample standard deviation
d. (1pt) Compute the sample standard error

7. (7pts) (http://ci.columbia.edu/ci/premba_test/c0331/s7/s7_5.html) Based on the data provided below:

Economic Growth % (Xi)	S & P 500 Returns % (Yi)
2.1	8
2.5	12
4.0	14
3.6	10

a. (1pt) Draw a scatterplot that describes the relationship between economic growth and S&P 500 returns.
b. (2pts) Using the covariance formula to find cov(x,y)
c. (2pts) Find the correlation between economic growth and S&P 500 returns, and interpret it.

8. (2pts) Given the following probability data from Harry Potter,

	Slytherin	Not Slytherin
Death Eater	0.04	0.01
Not Death Eater	0.21	0.74

a. What is your probability of being in Slytherin?
b. Given that you are Death Eater, what is your probability of being in Slytherin?