Date- 2/14/2019
Mr. Aguisse.
Math 1342-13

Standard deviation: $\delta = \sqrt{\frac{\Sigma x_i^2 - \frac{(\Sigma x_i)^2}{N}}{N}}$

Sample standard deviation =

$$s = \sqrt{\frac{(x_1 - \bar{x})^2 + \cdots + (x_n - \bar{x})^2}{n-1}}$$

$$= \sqrt{\frac{\Sigma (x_i - \bar{x})^2}{n-1}}$$

Empirical rule:

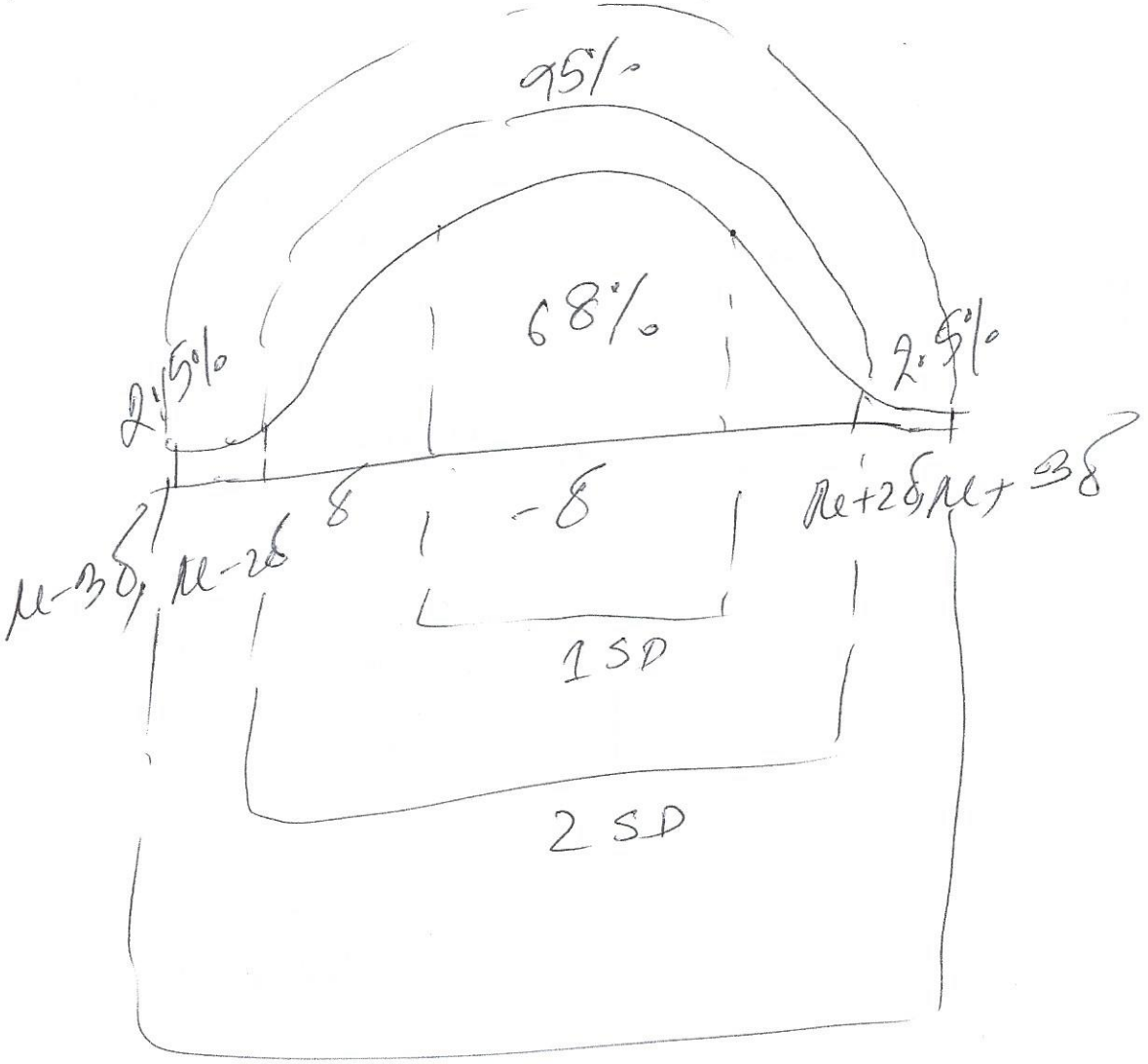
68% of Data within 1 SD of the mean $(\mu - 1\delta, \mu + 1\delta)$

95% of Data within 2 SD of the mean $(\mu - 2\delta, \mu + 2\delta)$

99.7% of Data within 3 SD of the mean $(\mu - 3\delta, \mu + 3\delta)$

The empirical rule also applies for S and

X.



Date - 2/24/2019

3.1.27 Hours Working

A random sample of 25 college students was asked 'How many hours per week typically do you work outside the home?' Their responses were as follows:

$$0, 0, 15, 20, 30$$

$$40, 30, 20, 35, 35$$

$$28, 15, 20, 25, 25$$

$$30, 5, 0, 30, 24$$

$$28, 30, 35, 15, 15$$

(1) Determine the shape of the distribution of hours worked by drawing a frequency histogram.

(2) Find the mean and median.

(3) Which measure of central tendency better describes hours worked?

3.2.19 Pulse Rates

The following data represent the pulse rates (beats per minute) of nine students enrolled in a section of 1342 - Elementary Statistics. Treat the nine students as a population.

$$76, 60, 60, 81, 72, 80, 80, 68, 73$$

(a) Determine the population standard deviation.

(b) Find three simple random samples of size 3, and determine the sample standard deviation of each sample.

(c) Which samples underestimate the population standard deviation? Which overestimate?