MAT 135, Discussion Questions 2.08

1. How does the formula for a weighted average differ from the general formula for the arithmetic mean?

weighted average $= \frac{\sum x_i \cdot w_i}{\sum w_i}$ multiply values by weights (or frequencies) divide by sum of weights.

2. How do we calculate a weighted mean in the calculator? Or the mean for grouped data?

put values in L_1; frequencies in L_2

1-VarStats L_1, L_2

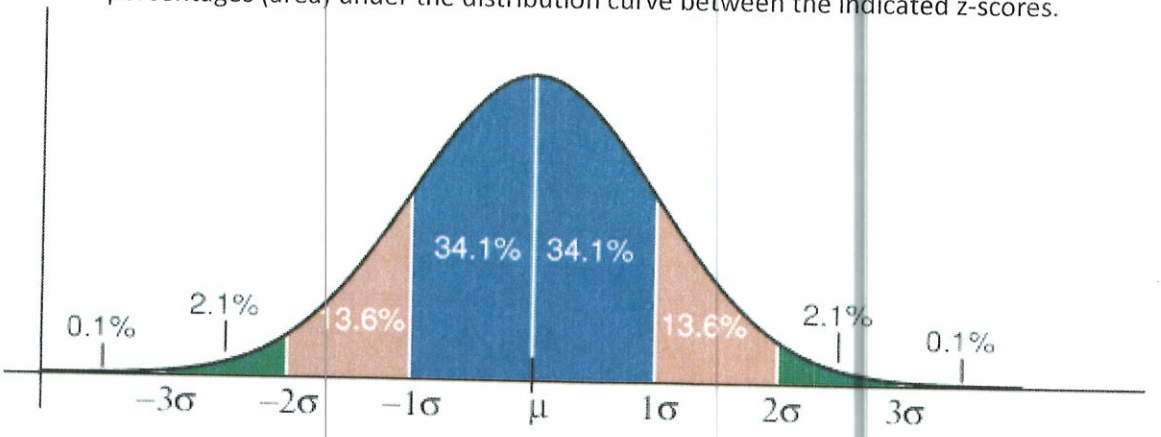
3. What is the coefficient of variation?

$$CV = \frac{\sigma}{\mu}$$

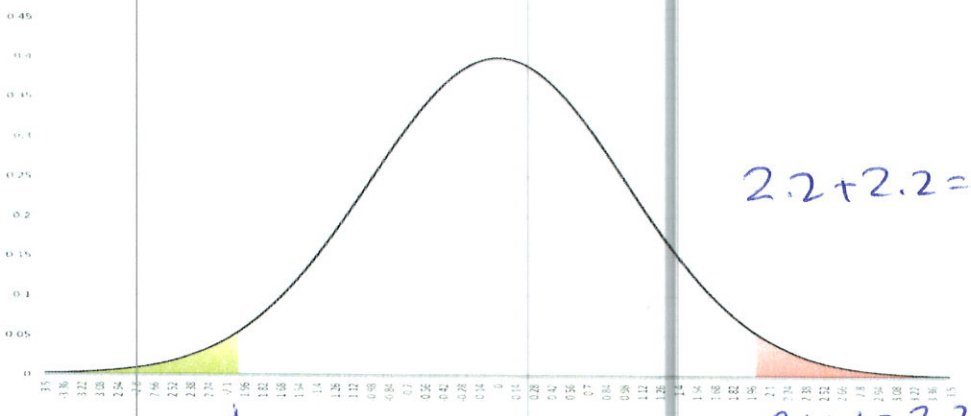
4. Why is the coefficient of variation needed to compare data sets with different means and different standard deviations?

is unitless; allows us to compare the spread of a data set relative to the units its measured in as a proportion

5. Using the Empirical Rule (a slightly more accurate version is shown on the graph below), find the percentages (area) under the distribution curve between the indicated z-scores.

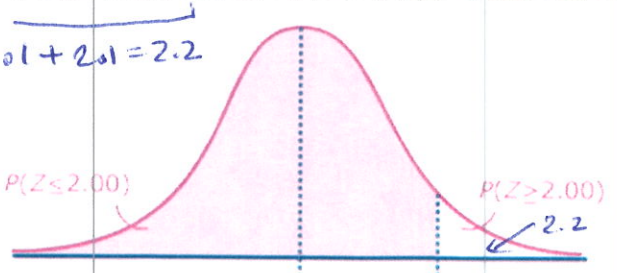


a.



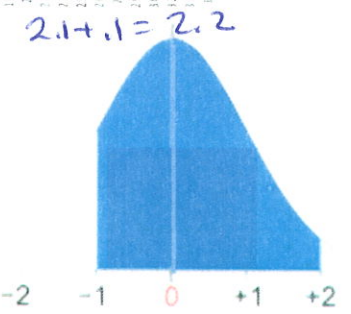
2.2 + 2.2 = 4.4%

b.



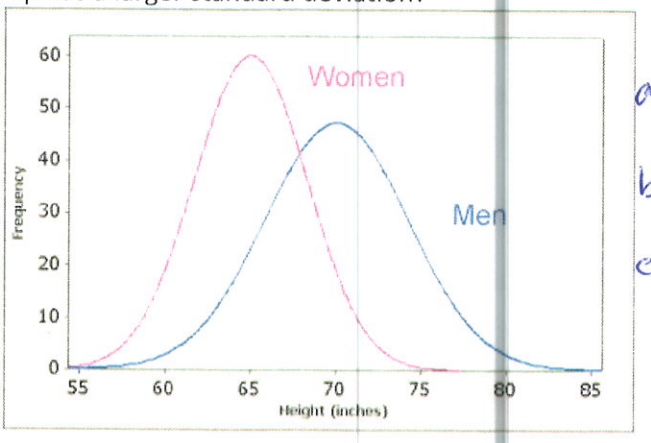
100 − 2.2 = 97.8%

c.



34.1 + 34.1 + 13.6 = 81.8%

6. Based on the graph below, what is the mean height of men? What is the mean height of women? Which group has a larger standard deviation?



a) mean ≈ 70 in

b) women ≈ 64-65 in

c) larger spread is men

7. Read the article at http://bigthink.com/ideafeed/how-we-learn and the rest of the interview linked in the article. Can any of these strategies help you in this class?