

MAT 223, Discussion Questions 9.14

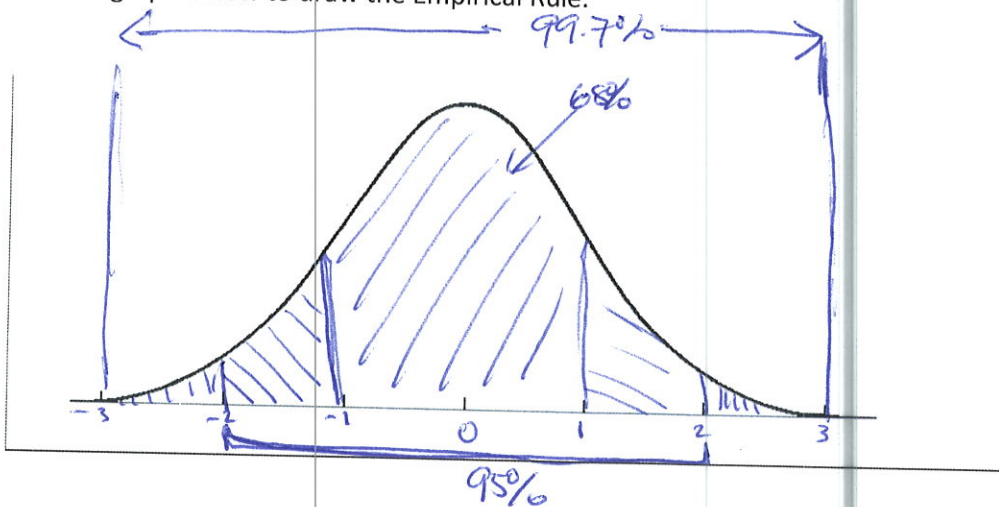
1. What is the coefficient of variation?

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

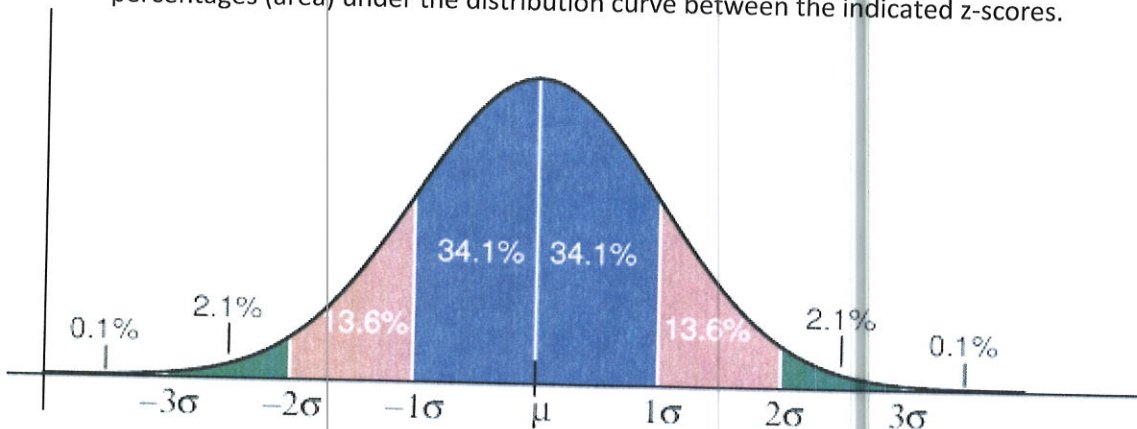
2. Why is the coefficient of variation needed to compare data sets with different means and different standard deviations?

the coefficient of variation is unitless and tells how variable the distribution is relative to its mean.

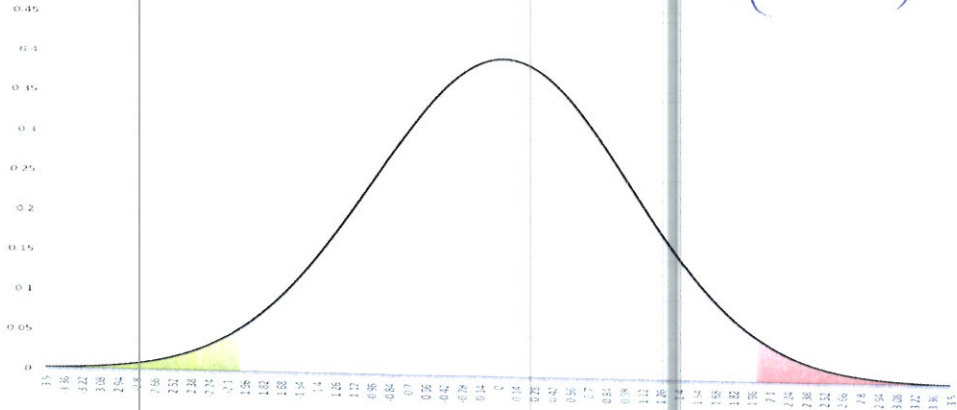
3. We will discuss the normal distribution later on in the course in greater detail, but it is just one example of a common symmetric distribution that can be described as bell-shaped. Use the graph below to draw the Empirical Rule.



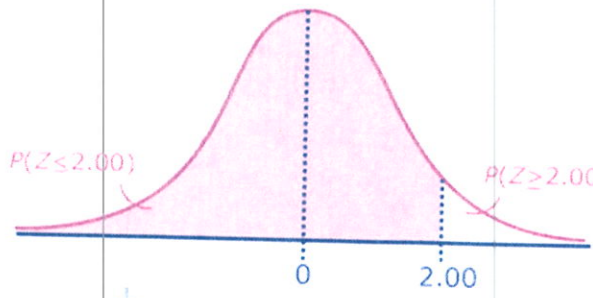
4. Using the Empirical Rule (a slightly more accurate version is shown on the graph below), find the percentages (area) under the distribution curve between the indicated z-scores.



$$2(2.1 + .1) = 2(2.2) = 4.4\%$$



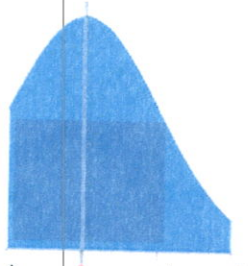
a.



$$2.1 + .1 = 2.2$$

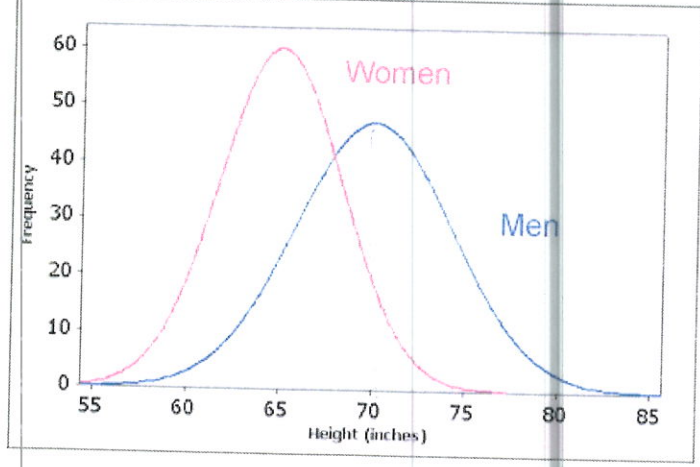
$$100 - 2.2 = 97.8\%$$

b.



$$13.6 + 68.2 = 81.8\%$$

5. 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?



70"
64"
men

6. Read the article at <http://bigthink.com/ideafeed/how-we-learn> and the rest of the interview linked in the article. Be prepared to discuss it in class.