Get out the Please Be Discrete Task and have questions ready!

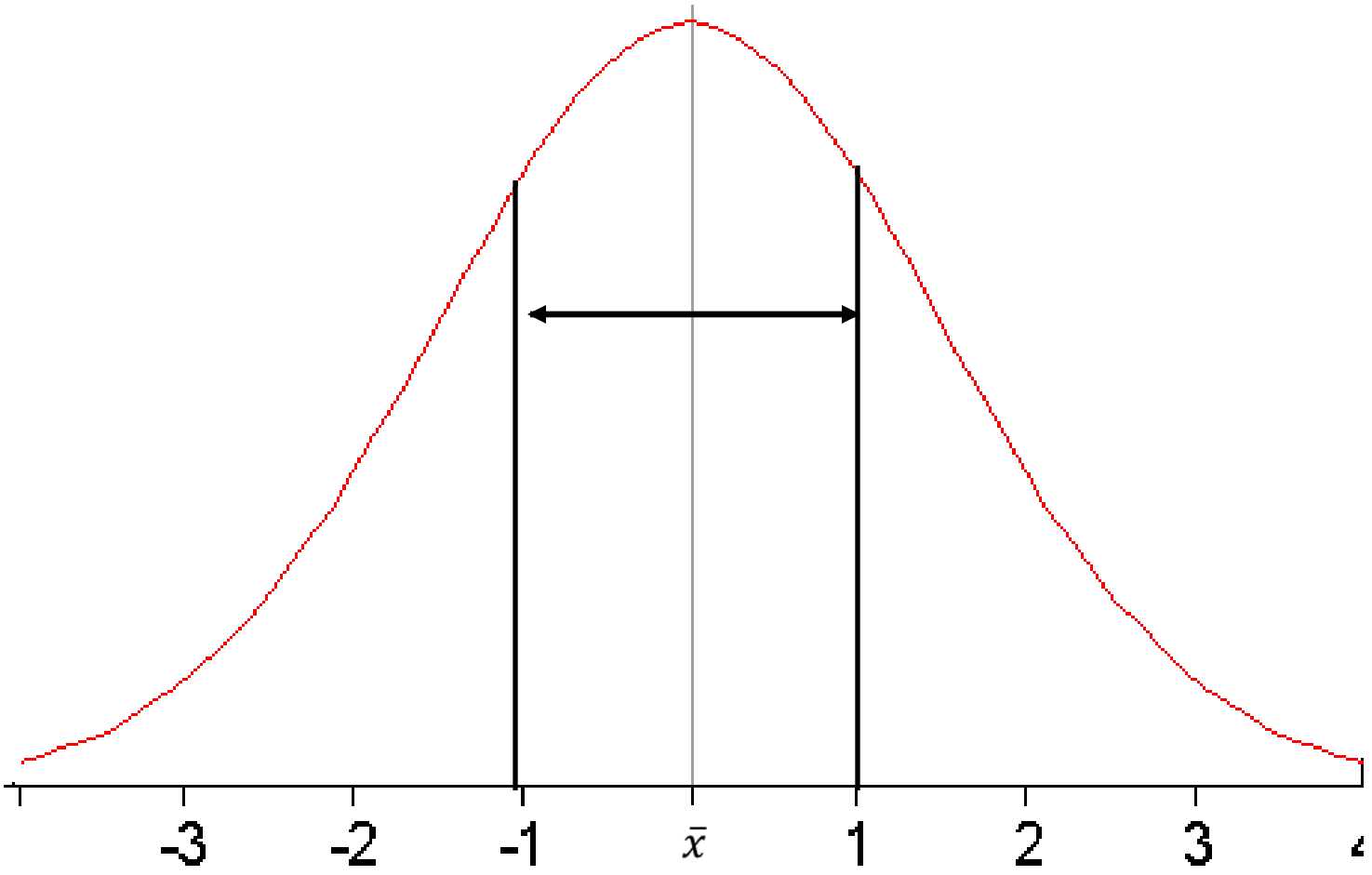
April 25th, 2013

Unit 6: Data Analysis

EMPIRICAL RULE

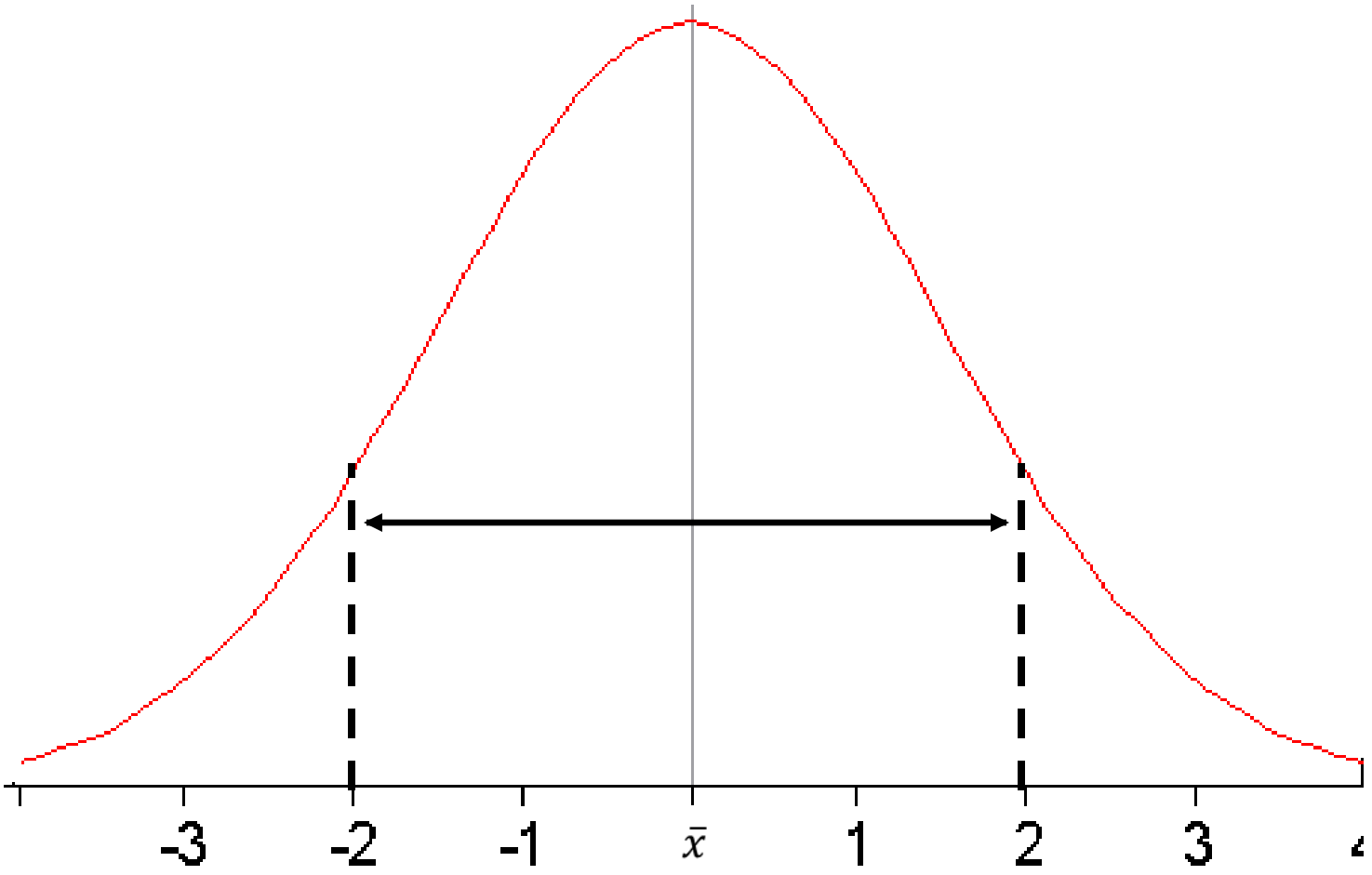
What does a population that is normally distributed look like?

Empirical Rule



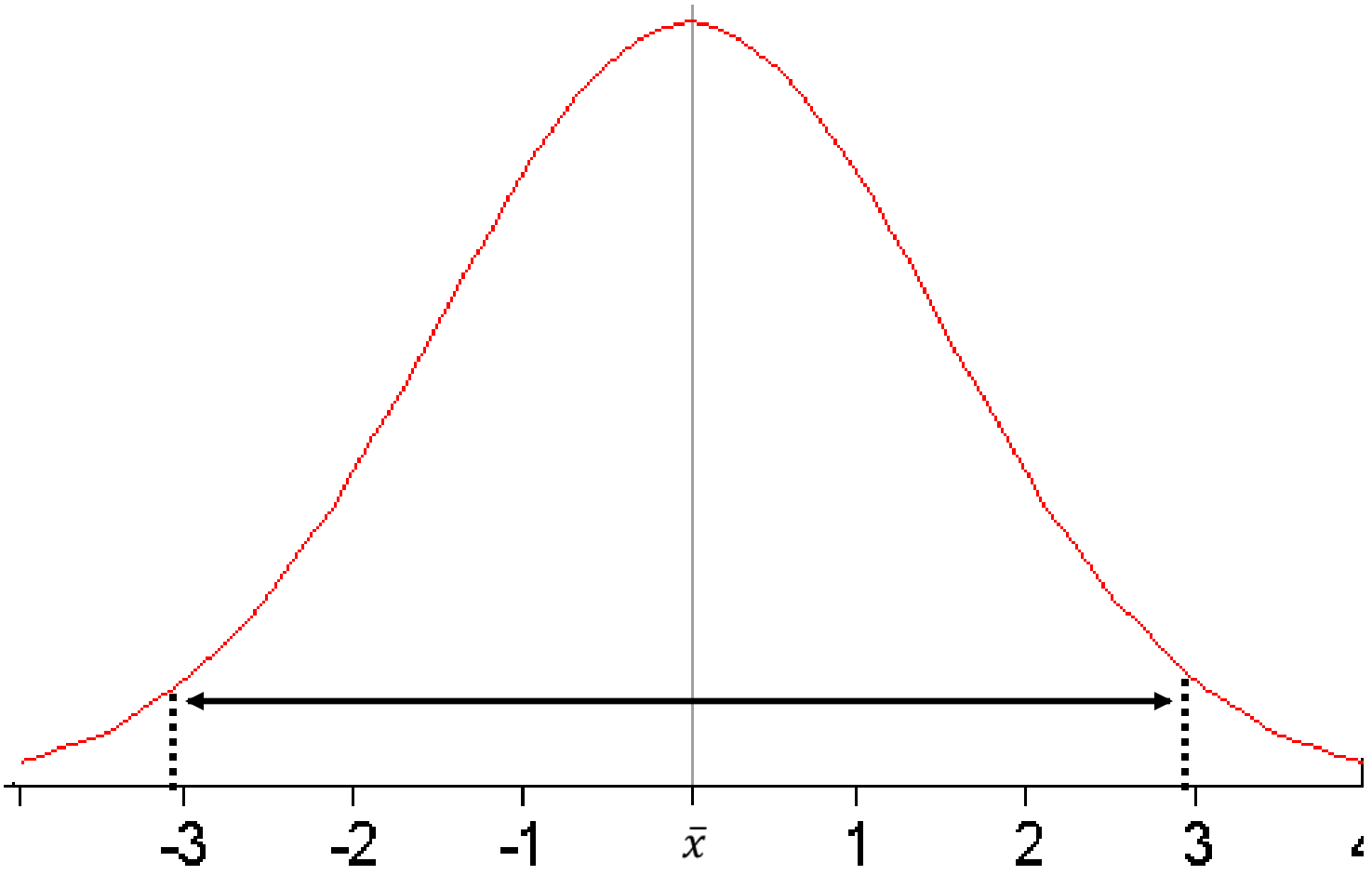
68-95-99.7% RULE

Empirical Rule



68-95-99.7% RULE

Empirical Rule



68-95-99.7% RULE

Empirical Rule—restated

68% of the data values fall within **1** standard deviation of the mean in either direction

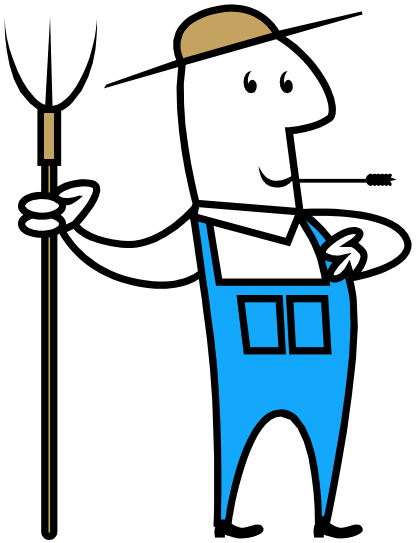
95% of the data values fall within **2** standard deviation of the mean in either direction

99.7% of the data values fall within **3** standard deviation of the mean in either direction

Remember values in a data set must appear to be a normal bell-shaped histogram, dotplot, or stemplot to use the Empirical Rule!

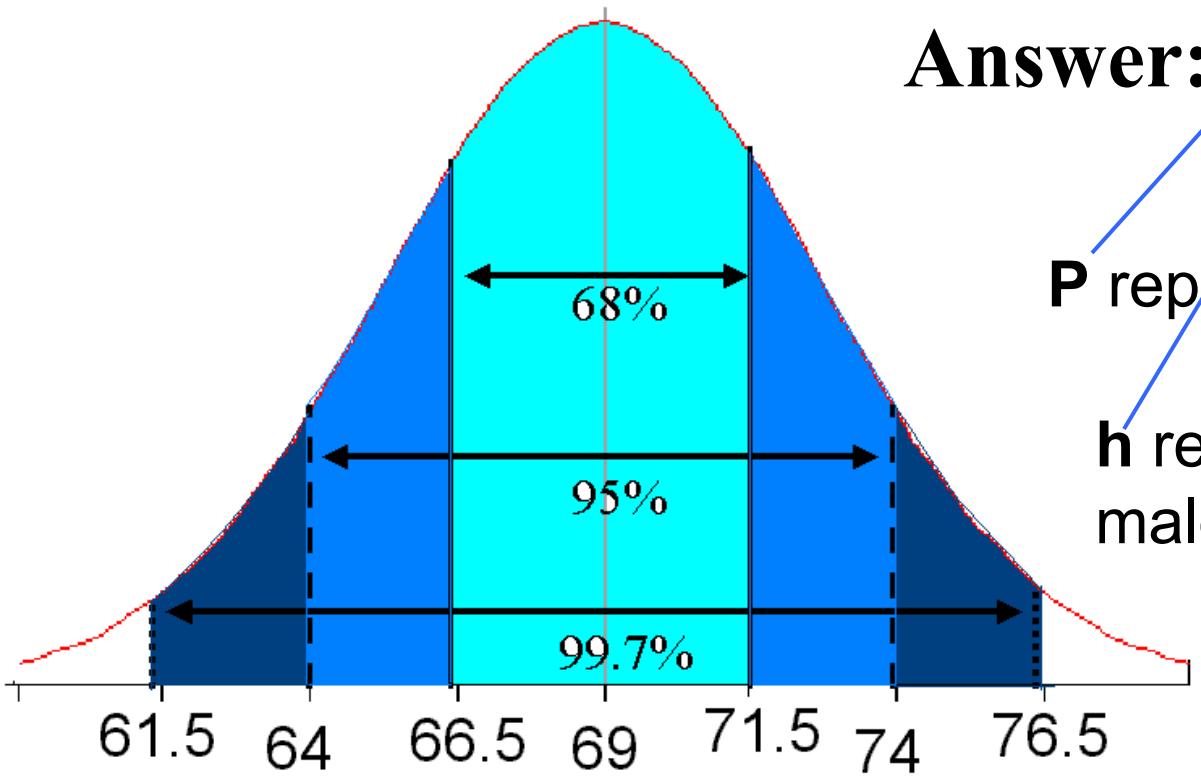
Average American adult male height is 69 inches (5’ 9”) tall with a standard deviation of 2.5 inches.

What does the normal distribution for this data look like?



Empirical Rule-- Let H~N(69, 2.5)

What is the likelihood that a randomly selected adult male would have a height less than 69 inches?



Answer: P(h < 69) = .50

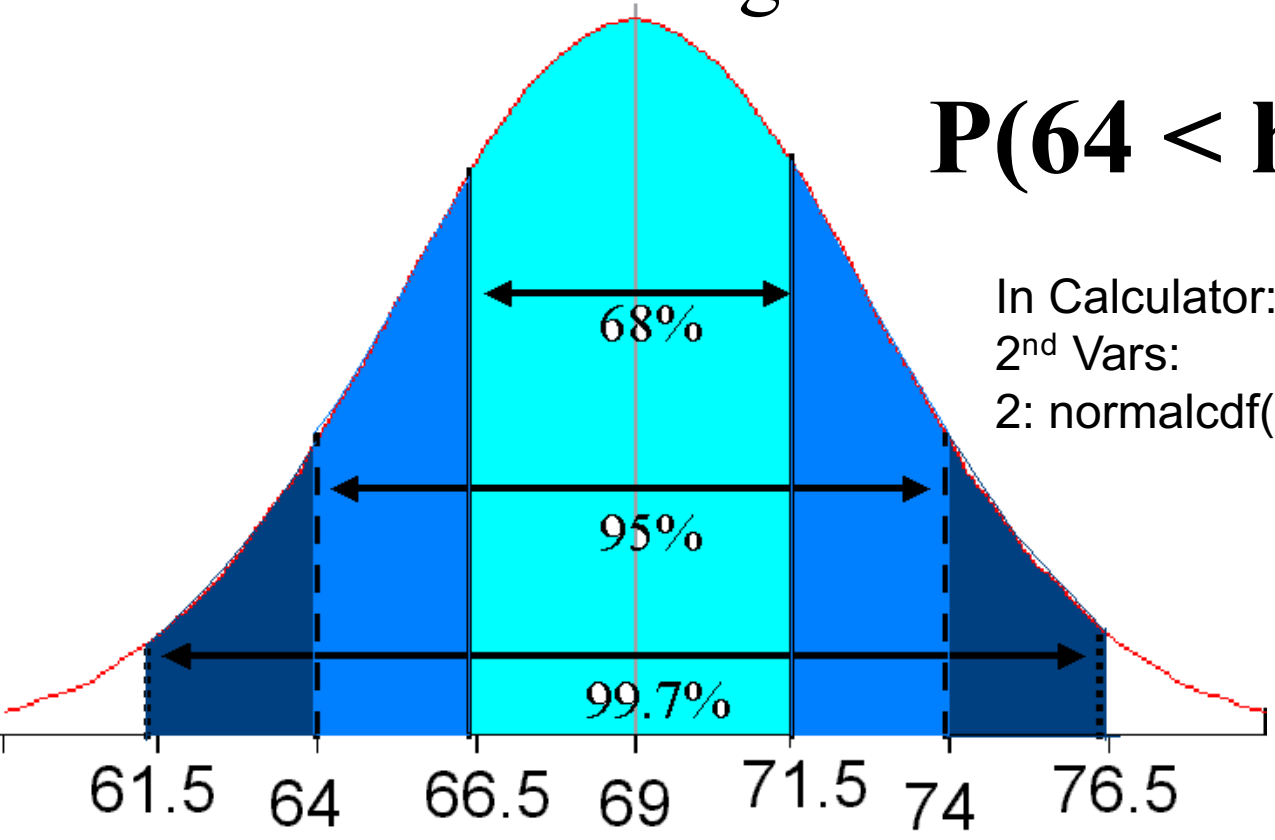
P represents **Probability**

h represents one adult male **height**

Using the Empirical Rule

Let H~N(69, 2.5)

What is the likelihood that a randomly selected adult male will have a height between 64 and 74 inches?



P(64 < h < 74) = .95

In Calculator:
2nd Vars:
2: normalcdf(lower, upper, mean, st. dev.)

Using Empirical Rule-- Let H~N(69, 2.5)

What is the likelihood that a randomly selected adult male would have a height of greater than 74 inches?

= .0228

Using Empirical Rule--Let H~N(69, 2.5)

What is the probability that a randomly selected adult male would have a height between 64 and 76.5 inches?

= .9759

Assignment: Statistics Test 1 Review