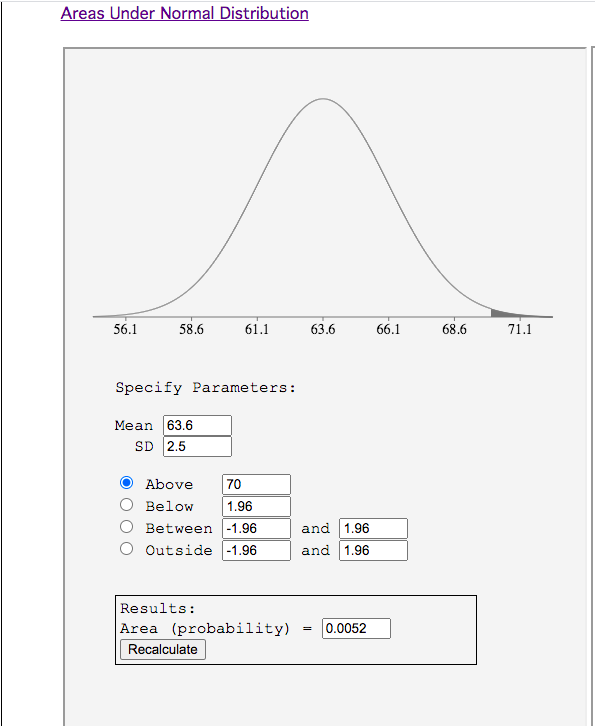
Application of the Normal Distribution

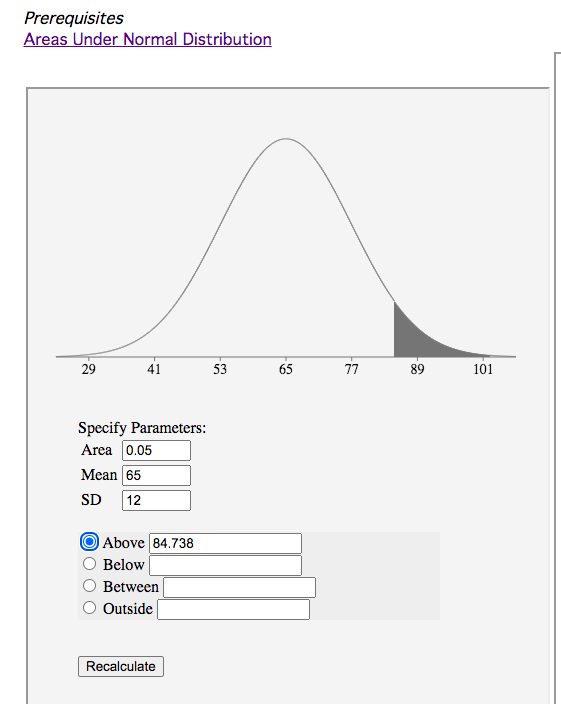
1. Assume that heights of women are normally distributed with a mean given by 63.6 in. and a standard deviation given by 2.5 in. (based on data from the National Health Survey). The Beanstalk Club, a social organization for tall people, has a requirement that women must be at least 70 in. (or 5 ft 10 in.) tall. What percentage of women meet that requirement?



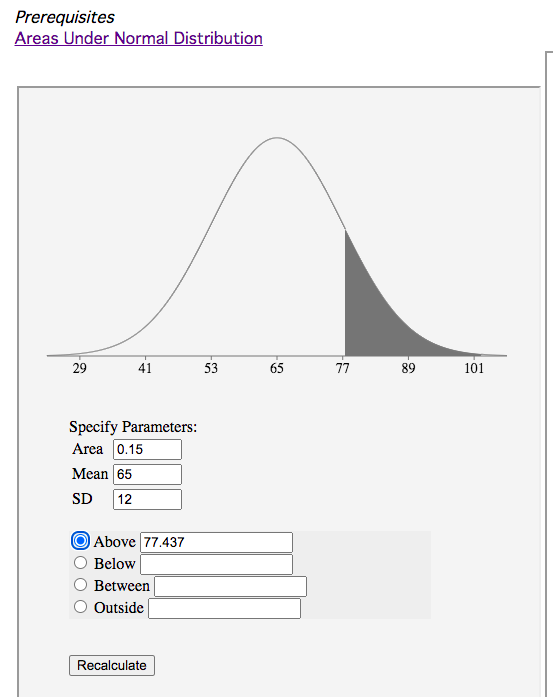
= 0.0052 or 0.52%

2. An instructor gives a 100-point examination in which the grades are approximately normally distributed. The mean is 65 and the standard deviation is 12. If there are 5% A’s and 5% F’s, 15% B’s and 15% D’s, and 60% C’s, what scores divide the distribution into those categories? Determine the interval of scores needed to receive a grade of

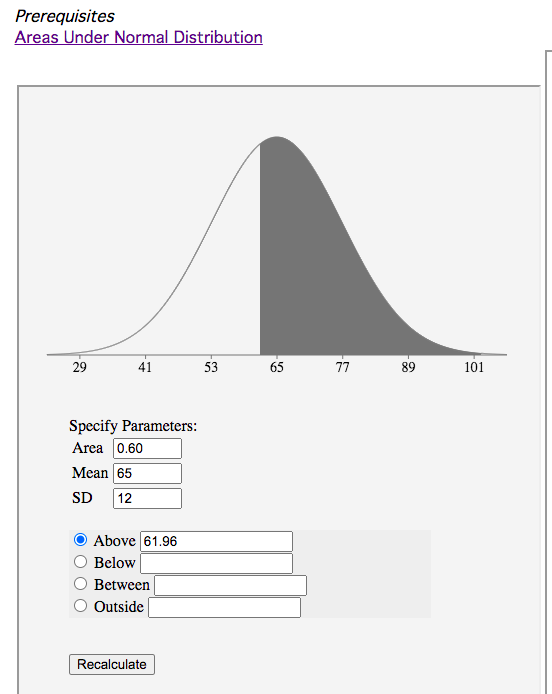
a. A



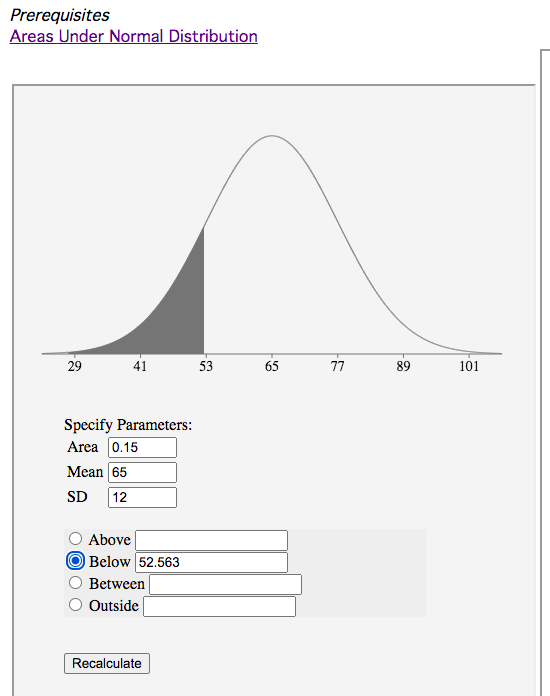
b. B



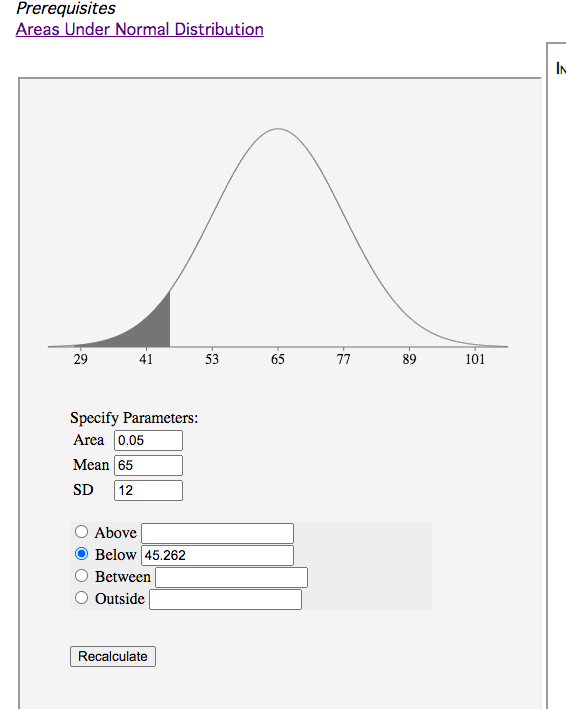
c. C

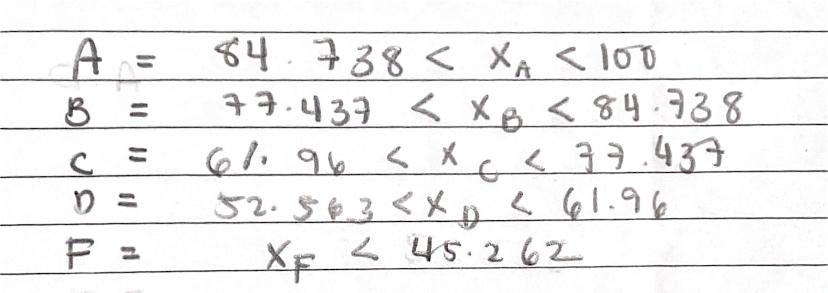


d. D

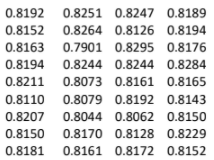


e. F





3. Weights (in pounds) of Regular Coke are listed below. Although the mean and standard deviation are sample statistics, assume that they are population parameters for all cans of regular Coke.



a. Determine the mean and standard deviation of the weights of regular coke. Use the sample standard deviation formula.

b. If a can of regular Coke is randomly selected, find the probability that its contents weigh more than 0.8300 lb.

c. For purposes of monitoring Coke production in the future, find the weights separating the bottom 10% and top 10%.