

d) Suppose that Professor DeGroot has a policy of giving A's to the top 10% of the scores on his final, regardless of the actual scores. If the distribution of scores on his final turns out to be normal with mean 69 and standard deviation 9, how high does your score have to be to earn an A?

4. Some IQ tests are standardized to a Normal model with a mean of 100 and a standard deviation of 16.

a) What score would begin the interval for the top 16% of all scores? You may use the Empirical Rule to answer this.

b) The top 10% of all scores represent the label of "genius". What is the range of scores for anyone who qualifies as a genius?

c) What proportion of test takers score a 130 or higher?

5. Assume the cholesterol levels of Adult American women can be described by a Normal model with a mean of 188 mg/dL and a standard deviation of 24.

a) What percent of adult women do you expect to have cholesterol levels over 200 mg/dL?

b) What percent of adult women do you expect to have cholesterol levels between 150 and 170 mg/dL?

c) What is the first and third quartile of the cholesterol levels?

d) Above what value are the highest 15% of women's cholesterol levels?

6. The average noise level in a restaurant is 30 decibels with a standard deviation of 4 decibels. Ninety-nine percent of the time it is below what value?
- (A) 20.7
 (B) 32.0
 (C) 33.4
 (D) 37.8
 (E) 39.3
7. Cucumbers grown on a certain farm have weights with a standard deviation of 2 ounces. What is the mean weight if 85% of the cucumbers weigh less than 16 ounces?
- (A) 13.92
 (B) 14.30
 (C) 14.40
 (D) 14.88
 (E) 15.70
8. The following is the list reflects the number of children of the presidents of the United States up through George W. Bush.

0	0	0	0	0	0	1	1	2	2	2	2	2
2	2	2	2	3	3	3	3	3	3	4	4	4
4	4	4	4	5	5	5	6	6	6	6	6	6
7	8	10	14									

Assess the normality.

9. A researcher notes that two populations of lab mice - one consisting of mice with white fur, and one of the mice with grey fur - have the same mean weight, and both have approximately normal distributions. However, the population of white mice has a larger standard deviation than the population of grey mice. If the weights of both of these populations were plotted, how would the curves compare to each other?
10. Given the following statement: the percent of observations that are smaller than z in a standard normal distribution is 8%. What z -score makes the statement true?