

1. The number of shark attacks per year in the United States is distributed approximately normal with a mean of 31.8 and a standard deviation of 10.0, according to data obtained from the Florida Museum of Natural History.
 - a) Approximately what percent of years will have fewer than 21 shark attacks?
 - b) Approximately what percent of years will have more than 41 shark attacks?
 - c) In 2000, there were 51 shark attacks in the United States. Is this an unusually high number of attacks? Why?
2. Since 1900, the magnitude of earthquakes that measure 0.1 or higher on the Richter Scale in California is distributed approximately normally, with a mean of 6.2 and standard deviation of 0.5, according to data obtained from the United States Geological Survey.
 - a) Determine the 84th percentile of the magnitude of earthquakes in California.
 - b) Determine the magnitude of earthquakes that make up the middle 95% of magnitudes.
3. On one measure of attractiveness, scores are normally distributed with a mean of 3.93 and a standard deviation of 0.75. Find the probability of randomly selecting a subject with a measure of attractiveness that is greater than 2.43.
4. The serum cholesterol levels in men aged 18 to 24 are normally distributed with a mean of 178.1 and a standard deviation of 40.7. If a man aged 18 to 24 is randomly selected, find the probability that his serum cholesterol level is approximately between 96 and 219.
5. On the Graduate Record Exam in economics, scores are normally distributed with a mean of 615 and a standard deviation of 107. If a college admissions office requires scores above the 84th percentile, find the cutoff point.
6. Scores on the numerical part of the Minnesota Clerical Test are normally distributed with a mean of 119.3 and a standard deviation of 32.4. If a firm requires scores above 151, find the approximate percentage of subjects who don't qualify.
7. For a certain population, scores on the Thematic Apperception Test are normally distributed with a mean of 22.83 and a standard deviation of 8.55. For a randomly selected subject, find the probability that the score is between 5.73 and 22.83.
8. The Chemco Company, which manufactures car tires, finds that the tires last distances that are normally distributed with a mean of 35,600 mi and a standard deviation of 4275 mi. The manufacturer wants to guarantee the tires so that only 2.5% will be replaced because of failure before the guaranteed number of miles. For how many miles should the tires be guaranteed?