

1. Given a normal distribution, what percentage of values are within 1 standard deviation from the mean?
2. Given a normal distribution, what percentage of values are within 2 standard deviations from the mean?
3. Given a normal distribution, what percentage of values are within 3 standard deviations from the mean?
4. On the math portion of the SAT, the scores are roughly normally distributed with a mean of 500 and standard deviation of 100.
  - a. Draw and label a bell curve out to 3 standard deviations above and below the mean.
  
  - b. What percent of SAT scores are above 500?
  - c. What percent of SAT scores are between 400 and 500?
  - d. What percent of SAT scores are above 400?
  - e. What percent of SAT scores are below 700?
  - f. What percent of SAT scores below 300?
  - g. Between what two values do approximately 95% of SAT scores lie?
  - h. What is the score of a person who scores higher in the top 16%?
5. The heights of male students is normally distributed with a mean of 170 cm and a standard deviation of 8 cm. Find the percentage of male students whose height is: (Draw and label a bell curve below)
  - a. between 162 cm and 170 cm
  - b. between 170 cm and 186 cm
  - c. between 178 cm and 186 cm
  - d. less than 194 cm
  - e. less than 154 cm
  - f. greater than 162 cm

6. The Army reports that the distribution of head circumferences among male soldiers is approximately normal with a mean of 22.8 inches and standard deviation of 1.1 inches. Use the Empirical Rule to answer the following questions.
- Draw and label a bell curve.
  - What percent of the soldiers would have a head circumference between 20.6 inches and 25 inches?
  - What percent of the soldiers would have a head circumference greater than 25 inches?
  - What percent of the soldiers would have a head circumference less than 19.5 inches?
  - What percent of the soldiers would have a head circumference between 19.5 inches and 23.9 inches?
  - Between which two values would 95% of the soldiers' head circumferences fall?