

## z-Score practice

Name \_\_\_\_\_ Period: \_\_\_\_\_

1. A normal distribution of scores has a standard deviation of 10. Find the z-scores corresponding to each of the following values:
  - a) A score of 60, where the mean score of the sample data values is 40.
  - b) A score that is 30 points below the mean.
  - c) A score of 80, where the mean score of the sample data values is 30.
  - d) A score of 20, where the mean score of the sample data values is 50.
  
2. IQ scores have a mean of 100 and a standard deviation of 16. Albert Einstein reportedly had an IQ of 160.
  - a. What is the difference between Einsteins IQ and the mean?
  - b. How many standard deviations is that?
  - c. Convert Einstein's IQ score to a z score.
  - d. If we consider "usual IQ scores to be those that convert z scores between -2 and 2, is Einstein's IQ usual or unusual?
  
3. Women's heights have a mean of 63.6 in. and a standard deviation of 2.5 inches. Find the z score corresponding to a woman with a height of 70 inches and determine whether the height is unusual.
  
4. Three students take equivalent stress tests. Which is the highest relative score (meaning which has the largest z score value)?
  - a. A score of 144 on a test with a mean of 128 and a standard deviation of 34.
  - b. A score of 90 on a test with a mean of 86 and a standard deviation of 18.
  - c. A score of 18 on a test with a mean of 15 and a standard deviation of 5.