**19.** **CONSTRUCTION** People who plaster ceilings sometimes walk on stilts. This allows them to reach high ceilings without having to move a ladder. The data set below gives the heights (in inches) of nine plasterers.

$$72, 73, 71, 66, 74, 68, 72, 69, 72$$

   **a.** Find the mean, median, mode, range, and standard deviation of the given heights.

   **b.** The plasterers use stilts that are 28 inches high. Find the mean, median, mode, range, and standard deviation of the plasterers' heights with stilts.

   **Animated Algebra** at classzone.com

**20.** **TAKS REASONING** A teacher gives a test for which the mean of the scores is 68 and the standard deviation is 15. The teacher decides to scale the test scores by adding 10 points to each score. What are the mean and standard deviation of the scaled test scores?

   **A** mean: 68, standard deviation: 25     **B** mean: 78, standard deviation: 15

   **C** mean: 78, standard deviation: 25     **D** mean: 78, standard deviation: 5

**21.** **MULTIPLE REPRESENTATIONS** The data set gives the winning distances (in meters) in the women's Olympic long jump event from 1952 to 2004.

   6.24, 6.35, 6.37, 6.76, 6.82, 6.78, 6.72, 7.06, 6.96, 7.40, 7.14, 7.12, 6.99, 7.07

   **a.** **Find Statistics in Meters** Find the mean, median, mode, range, and standard deviation of the distances in meters.

   **b.** **Find Statistics in Feet** Find the statistics listed in part (a) for the distances in feet. (*Note:* 1 meter ≈ 3.28 feet.)

**22.** **TAKS REASONING** The data set below gives the weights (in pounds) of eight smokejumpers with their equipment.

$$287, 265, 273, 275, 295, 280, 290, 280$$

   **a.** Find the mean, median, mode, range, and standard deviation of the given weights.

   **b.** The equipment each smokejumper carries weighs about 115 pounds. Find the mean, median, mode, range, and standard deviation of the weights of the smokejumpers without their equipment. *Explain* your reasoning.

**23.** **TAKS REASONING** The water temperature in an outdoor pool is measured 12 times during a certain week. The temperatures (in degrees Fahrenheit) are listed below.

   74.5, 81.9, 72.5, 73.4, 78.4, 72.6, 76.8, 74.5, 77.6, 72.0, 79.2, 76.2

   **a.** Find the mean, median, mode, range, and standard deviation of the Fahrenheit temperatures.

   **b.** Convert all of the Fahrenheit temperatures $F$ to Celsius temperatures $C$ using the formula $C = \frac{5}{9}(F - 32)$.

   **c.** Find the mean, median, mode, range, and standard deviation of the Celsius temperatures.

   **d.** *Describe* the effects of converting from Fahrenheit to Celsius on the measures of central tendency and dispersion.

○ = **WORKED-OUT SOLUTIONS** on p. WS1     = **TAKS PRACTICE AND REASONING**     = **MULTIPLE REPRESENTATIONS**