

5.1.1

The Employment and Training Administration reported that the U.S. mean unemployment insurance benefit was \$238 per week (The World Almanac, 2003). A researcher in the state of Virginia anticipated that sample data would show evidence that the mean weekly unemployment insurance benefit in Virginia was below the national average.

- a) Develop appropriate hypotheses such that rejection of H_0 will support the researcher's contention.
- b) For a sample of 100 individuals, the sample mean weekly unemployment insurance benefit was \$231 with a sample standard deviation of \$80. What is the p -value?
- c) At $\alpha = .05$, what is your conclusion?
- d) Repeat the preceding hypothesis test using the critical value approach.

5.1.2

A shareholders' group, in lodging a protest, claimed that the mean tenure for a chief executive office (CEO) was at least nine years. A survey of companies reported in The Wall Street Journal found a sample mean tenure of $\bar{X} = 7.27$ years for CEOs with a standard deviation of $s = 6.38$ years (The Wall Street Journal, January 2, 2007).

- a) Formulate hypotheses that can be used to challenge the validity of the claim made by the shareholders' group.
- b) Assume 85 companies were included in the sample. What is the p -value for your hypothesis test?
- c) At $\alpha = .01$, what is your conclusion?

5.1.3

The Coca-Cola Company reported that the mean per capita annual sales of its beverages in the United States was 423 eight-ounce servings (Coca-Cola Company website, February 3, 2009). Suppose you are curious whether the consumption of Coca-Cola beverages is higher in Atlanta, Georgia, the location of Coca-Cola's corporate headquarters.

A sample of 36 individuals from the Atlanta area showed a sample mean annual consumption of 460.4 eight-ounce servings with a standard deviation of $s = 101.9$ ounces.

Using $\alpha = .05$, do the sample results support the conclusion that mean annual consumption of Coca-Cola beverage products is higher in Atlanta?