CHECKING YOUR PROGRESS: A SELF-TEST

1. The probability that an inferential test will detect a false null hypothesis is called the
   a. central limit theorem.
   b. power of a test.
   c. Type I error.
   d. Type II error.

2. If the null hypothesis is rejected when it shouldn't be, it is called a
   a. power.
   b. Type I error.
   c. Type II error.
   d. standard error.

3. If the null hypothesis is not rejected when it should be, it is called a
   a. power.
   b. Type I error.
   c. Type II error.
   d. standard error.

4. What are the properties of the sampling distribution of means?

5. A local school district employs a standardized reading test for all students entering the 9th grade. The mean score on this test is 27.4. Last year, the district instituted a reading program in the 6th through the 8th grades. The 217 students entering the 9th grade this year have a mean reading score of 28.2, with $s = 8.56$.

   a. Has the program improved reading?

   b. What is the 95% CI for μ?

6. A social psychologist finds that in a typical 15-minute conversation with a spouse, a person performs 32.1 nods of the head. In a sample of 13 couples experiencing marital difficulty, the average number of nods is 22.6, with $s = 7.6$.

   a. Did marital difficulty reduce nods?

   b. What is the 99% CI for μ?

7. The Hypochondriasis scale of the MMPI yields $\mu = 49.2$. The counseling center of a university routinely administers the MMPI to students seeking counseling. The hypochondriasis scores of the 12 students seeking counseling during the first week of the term are listed below.

$\underline{X}$
42
76
59
62
52
57
63
50
48
72
81
39

Find:

a. $\overline{X}$

b. s^2

c. s

d. $s_{\overline{X}}$

e. What is the 95% CI for μ?

f. Do students seeking counseling evidence more hypochondriasis than would be expected from test norms?