

## CHAPTER 7

### Overview of Statistical Hypothesis Testing: The z-Test

#### YOU SHOULD LEARN

1. Why the possibility of sampling error is the reason inferential statistical procedures are used.
2. When experimental hypotheses lead to either one-tailed or two-tailed statistical tests.
3. How to set up the null and alternative hypotheses for one- and two-tailed tests.
4. How to perform a  $z$ -test and when it should be performed.
5. How to interpret significant and nonsignificant results.
6. What Type I errors, Type II errors, and power are.

#### YOU SHOULD LEARN WHEN, WHY, AND HOW TO USE THESE FORMULAS

1. The computational formula for the  $z$ -test is

$$z_{\text{obt}} = \frac{\bar{X} - \mu}{\sigma_{\bar{X}}}$$

2. The computational formula for the standard error of the mean is

$$\sigma_{\bar{X}} = \frac{\sigma_X}{\sqrt{N}}$$