

Chapter 8

- 8-1. $\alpha = 0.0118$; $\beta = 0.3704$; power = 0.6296; $P = 0.1316$.
- 8-2. The decision rule is to reject the null hypothesis when the number of pairs favoring diet 1 is 14 to 20 with $\sigma = 0.0577$ and $\beta = 0.0867$.
- 8-3. A specific alternative value of $\pi = 0.7$ may be considered important in this study, but the power of the test with $n=12$ is only 0.253. In order to use $\pi = 0.7$, we have to increase the sample size.
- 8-4. When the alternative π is 0.5, the value of power is 0.0386, which is the significance level of this test. The complete power function of this test, with the value of π ranging from 0.05 to 0.95, is V-shaped, indicating that the power increases as the alternative value of π diverges from 0.5 in both directions.