

## CHAPTER 8: Interval Estimation

### Learning Objectives

After studying this chapter and doing the exercises, you should be able to:

1. Explain the purpose of an interval estimate of a population parameter.
2. Explain the meaning of the terms margin of error, confidence interval, confidence level and confidence coefficient.
3. Construct confidence intervals for a population mean:
  - 3.1 When the population standard deviation is known, using the normal distribution
  - 3.2 When the population standard deviation is unknown, using the  $t$  distribution.
4. Construct large-sample confidence intervals for a population proportion.
5. Calculate the sample size required to construct a confidence interval with a given margin of error for a population mean, when the population standard deviation is known.
6. Calculate the sample size required to construct a confidence interval with a given margin of error for a population proportion.