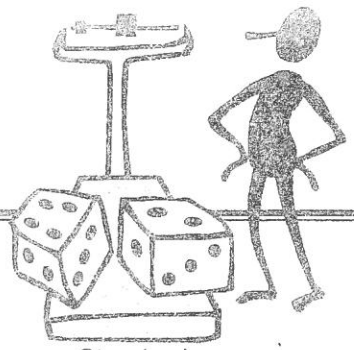
Chapter 18: Sampling Distribution Models



Key Vocabulary:

- parameter
- statistic
- proportion
- sampling distribution model
- Central Limit Theorem
- Standard error

1. Explain the difference between a *parameter* and a *statistic.*

2. Explain the difference between p and $\hat{p}$?

3. What is meant by *sampling variability*?

4. What is meant by the *sampling distribution model* of a statistic?

5. How is the size of a sample related to the *spread* of the sampling distribution?

6. In an SRS of size n, what is true about the sampling distribution of $\hat{p}$ when the sample size n increases?

7. In an SRS of size n, what is the mean of the sampling distribution of $\hat{p}$?

8. In an SRS of size n, what is the standard deviation of the sampling distribution of $\hat{p}$?

9. What happens to the standard deviation of $\hat{p}$ as the sample size n increases?

10. When does the formula $\sqrt{\frac{pq}{n}}$ apply to the standard deviation of $\hat{p}$?

11. When the sample size n is large, the sampling distribution of $\hat{p}$ is approximately normal. What test can you use to determine if the sample is large enough to assume that the sampling distribution is approximately normal?

12. The mean and standard deviation of a population are *parameters*.
    What symbols are used to represent these *parameters*?

13. The mean and standard deviation of a sample are *statistics*.
    What symbols are used to represent these *statistics*?

14. Because averages are less variable than individual outcomes, what is true about the standard deviation of the sampling distribution of $\bar{x}$?

15. What is the mean of the sampling distribution of $\bar{x}$, if $\bar{x}$ is the mean of an SRS of size n drawn from a large population with mean μ and standard deviation σ?

16. What is the standard deviation of the sampling distribution of $\bar{x}$, if $\bar{x}$ is the mean of an SRS of size n drawn from a large population with mean μ and standard deviation σ?