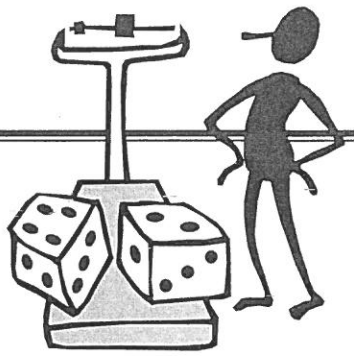
Chapter 26: Comparing Counts



Key Vocabulary:

- chi-square test for goodness of fit
- chi-square statistic
- expected count
- observed count
- degrees of freedom
- chi-square distribution
- components of chi-square
- cell counts
- r x c table

Calculator Skills:

- sum ( )
- χ^2cdf (leftbound, rightbound, df)
- χ^2pdf (X, df)
- χ^2-Test

1. State the null and alternative hypotheses for a *goodness of fit test*.

2. What conditions must be met in order to use a *goodness of fit test*?

3. What is the *chi-square statistic*?

4. What is the difference between the notation X^2 and χ^2?

5. How many degrees of freedom does the *chi-square distribution* have?

6. As the *chi-square statistic* increases, what happens to the P-value?

7. In order to reject the null hypothesis, what will be true about the *chi-square statistic*?

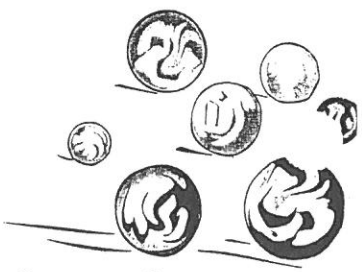
8. Describe the domain of a *chi-square distribution*?

9. What is the shape of a *chi-square distribution*? What happens to the shape as the degrees of freedom increases?

10. Explain the difference between a *chi-square test for goodness-of-fit* and a *chi-square test of homogeneity*.

11. State the null and alternative hypotheses for comparing more than two proportions.

12. How do you calculate the expected count in any cell of a two-way table when the null hypothesis is true?



13. How many degrees of freedom does a chi-square test for a two-way table with r rows and c columns have?

14. If you decide to reject the null hypothesis when performing a chi-square test of homogeneity, it is necessary to follow up by examining the residuals of the components. Explain how to standardize the residuals for the components of the chi-square test.

15. What would you look for when interpreting these standardized residuals?

16. State the null and alternative hypotheses for a *chi-square test for independence*.

17. Explain the difference between a chi-square test of homogeneity and a *chi-square test for independence* (think about the hypotheses for each).