ERRATA

Standard Probability and Statistics
Tables and Formulae
Student Edition

by

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and

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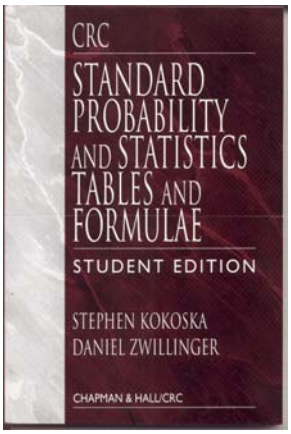

If you find errata, please email us at skokoska@bloomu.edu.

1. Table of Contents:
   Section 6.2 "chi-square distribution" should be "Chi-square distribution."

2. Page 77:
   Following the table describing the notation used throughout this chapter, the properties of the beta distribution are missing.

   Properties of the beta distribution:

$$\text{pdf} \quad f(x) = \frac{\Gamma(\alpha+\beta)}{\Gamma(\alpha)\Gamma(\beta)} x^{\alpha-1}(1-x)^{\beta-1} = \frac{x^{\alpha-1}(1-x)^{\beta-1}}{B(\alpha,\beta)}$$

$$0 \le x \le 1, \quad \alpha,\ \beta > 0$$

$$\text{mean} \qquad \mu = \frac{\alpha}{\alpha+\beta}$$

$$\text{variance} \qquad \sigma^2 = \frac{\alpha\beta}{(\alpha+\beta)^2(\alpha+\beta+1)}$$

$$\text{skewness} \qquad \beta_1 = \frac{2(\beta-\alpha)\sqrt{\alpha+\beta+1}}{\sqrt{\alpha\beta}(\alpha+\beta+2)}$$

$$\text{kurtosis} \qquad \beta_2 = \frac{3(\alpha+\beta+1)[2(\alpha+\beta)^2+\alpha\beta(\alpha+\beta-6)]}{\alpha\beta(\alpha+\beta+2)(\alpha+\beta+3)}$$

$$\text{mgf} \quad m(t) = {}_1F_1(\alpha;\beta;t)$$

$$\text{char function} \quad \phi(t) =$$

$$\frac{1}{\alpha+\beta}\left(iat\ {}_2F_3\left[\left\{\frac{1}{2}+\frac{\alpha}{2}, 1+\frac{\alpha}{2}\right\}; \left\{\frac{3}{2}, \frac{1}{2}+\frac{\alpha}{2}+\frac{\beta}{2}, 1+\frac{\alpha}{2}+\frac{\beta}{2}\right\}; -\frac{t^2}{4}\right]\right)$$

$$+\ {}_2F_3\left[\left\{\frac{1}{2}+\frac{\alpha}{2}, \frac{\alpha}{2}\right\}; \left\{\frac{1}{2}, \frac{\alpha}{2}+\frac{\beta}{2}, \frac{1}{2}+\frac{\alpha}{2}+\frac{\beta}{2}\right\}; -\frac{t^2}{4}\right]$$

3. Section 6.4.2, Probability density function, page 88:
   The graph labels $\lambda = .5$ and $\lambda = 2$ are reversed.
   For $\lambda = 2$ the pdf passes through the point $(0, 2)$.
   For $\lambda = .5$ the pdf passes through the point $(0, 5)$.

4. Critical values for the t distribution, page 106:
   The last two values for α in the first row are incorrect.
   0.0025 should be 0.001.
   0.001 should be 0.0005.

5. Section 10.1, error probabilities (2), page 147:
   The last sentence: The **power** of the hypothesis test is $1 - \alpha$.
   It should read: The **power** of the hypothesis test is $1 - \beta$.

6. Notation, page 158:
   The formula for S_{xy} contains an errant power of 2.
   It should be:
   $$S_{xy} = \sum_{i=1}^{n}(x_i - \overline{x})(y_i - \overline{y}) = \sum_{i=1}^{n} x_i y_i - \frac{1}{n}\left(\sum_{i=1}^{n} x_i\right)\left(\sum_{i=1}^{n} y_i\right).$$

7. Section 11.1.2, Sum of squares, page 159:
   SSR = sum of squares due to regression = $\hat{\beta}_1 S_{xy}$.