ERRATA LIST

Page 20 – line 3 – 2nd brackets should have $\left(n-r_1-r_2\right)!$ (missing factorial symbol)

Page 35 – line -3 final answer should be 0.00001539

Page 37 – Power Prizes and Odds box – 1 in 1696.85 should be replaced with 1 in 696.85

Page 85 – Problem 22 Answer (B) should be 0.173

Page 86 – Problem 25 line 5 replace "operating room charges or hospital claims." With "operating room charges on hospital claims." (replace "or" with "on")

Page 104 – Exercise 3-19 – delete part (e) – (it is ambiguous for a variety of reasons)

Page 104 – Exercise 3-21 last line, replace "sized" with "sizes"

Page 112 – Exercise 3-32 – last sentence before data boxes should read, "Use means calculated from the following data:"

Page 113 – Markov Inequality – Change $Y > a$ with $Y \geq a$ in green box and in all instances in the following two lines of Proof, including as subscripts in the sigma summation notation.

Page 113 – Chebyshev's Theorem – replace box with:

Chebychev's Theorem

Let *X* be a discrete random variable with finite mean μ_X and standard deviation $\sigma_X > 0$. Let *k* be greater than or equal to 1. Then the probability that *X* is at least *k* standard deviations from the mean, μ_X, is less than or equal to $\frac{1}{k^2}$. That is,

$$\Pr\left(X \leq \mu_X - k\cdot\sigma_X \quad \text{or} \quad X \geq \mu_X + k\cdot\sigma_X\right) = \Pr\left(\left|X-\mu\right| \geq k\cdot\sigma_X\right) \leq \frac{1}{k^2}.$$

Equivalently,

$$\Pr\left(\mu_X - k\cdot\sigma_X < X < \mu_X + k\cdot\sigma_X\right) = \Pr\left(\left|X-\mu\right| < k\cdot\sigma_X\right) \geq 1-\frac{1}{k^2}.$$

Pg 114 – replace formulas in lines 4, 6 and 8 with:

$$\Pr\left[\left(\frac{X-\mu_X}{\sigma_X}\right)^2 \geq k^2\right] \leq \frac{1}{k^2},$$

$$\Pr\left[(X-\mu_X)^2 \geq k^2\sigma_X^2\right] \leq \frac{1}{k^2}.$$

$$\Pr\left[|X-\mu_X| \geq k\sigma_X\right] \leq \frac{1}{k^2}.$$

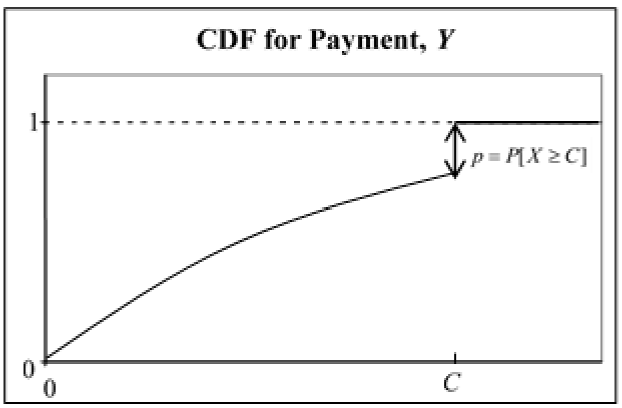
Page 126 – Exercise 3-44 (c) should reference Exercise 3-23.

Page 173 – 13 – Above answers insert the clarifying note:

Note: The wording is ambiguous. To clarify, assume that an unknown number *n* of the 27 suitcases is insured and the damaged suitcases constitute a random sample of size 4.

Page 198 – line 10 – should read, "Here we note that $f(x) = 2e^{-2x}$,"

Page 211 – the following graph was inadvertently omitted and should be placed immediately following the CDF for Loss, *X* graph:



Page 239 – line -7 – should read: $= 1 - \Pr\left[Y_x = 0\right] = 1 - e^{-\lambda x} \cdot \frac{(\lambda x)^0}{0!} = 1 - e^{-\lambda x}.$

Page 246 – Exercise 6-23 – The line beginning "For a deductible of 100," is inadvertently repeated.

Page 247 – line -2 formula should read: $A^2 = \left[\int_{-\infty}^{\infty} e^{-(z^2/2)}\, dz\right] \cdot \left[\int_{-\infty}^{\infty} e^{-(z^2/2)}\, dz\right].$

Page 255 – Example 6.3-4 line 1 expression should read: Suppose that $X \sim N\left(50, 8^2\right)$.

Page 262 – Markov Inequality – replace $\Pr\left[Y > a\right]$ with $\Pr\left[Y \geq a\right]$

Page 263 – Corrected Chebyshev's Theorem box should read:

Chebychev's Theorem

Let X be a discrete random variable with finite mean μ_X and standard deviation $\sigma_X > 0$. Let k be greater than or equal to 1. Then the probability that X is at least k standard deviations from the mean, μ_X, is less than or equal to $\frac{1}{k^2}$. That is,

$$\Pr\left(X \le \mu_X - k\cdot\sigma_X \quad \text{or} \quad X \ge \mu_X + k\cdot\sigma_X\right) = \Pr\left(|X-\mu| \ge k\cdot\sigma_X\right) \le \frac{1}{k^2}.$$

Equivalently,

$$\Pr\left(\mu_X - k\cdot\sigma_X < X < \mu_X + k\cdot\sigma_X\right) = \Pr\left(|X-\mu| < k\cdot\sigma_X\right) \ge 1 - \frac{1}{k^2}.$$

Page 269 – Exercise 6-41 – Parts (a) and (b) should be interchanged

Page 271 – line 6 – the first σ_X should be replaced with $\sigma_{\bar{X}}$ ($\bar{X}$, not X).

Page 289 – line -8 formula should read: $4\overbrace{\int_0^\infty \int_0^{\pi/2} (r^{2\alpha-1}\cos^{2\alpha-1}\theta)(r^{2\beta-1}\sin^{2\beta-1}\theta)e^{-(r^2)}r\,d\theta\,dr}^{\text{polar coordinates } u=r\cos\theta,\ v=r\sin\theta}$

(interchange $d\theta$ and dr)

Page 292 – Exercise 6-69 – replace Y with X in both occurrences.

Page 300 – insert note at top of page:

Note: Exercises 6-76 and 6-77 are repeated from Chapter 5. Rework using the Pareto properties in the current section.

Page 317 – Exercise 7-9 – in last line replace "functions" with "function"

Page 318 – line 1 – first fraction in formula should be $\frac{3}{4}$ not $\frac{1}{3}$

Page 324 – Exercise 7-12 – replace f with F

Page 335 – line 1 – replace Example 7.1-3 with Example 7.5-3

Page 337 – line 9 – replace expression with: $= \left[\frac{7y^2}{8} - \frac{y^3}{3}\right]_{y=0}^{1} = \left(\frac{7}{8}-\frac{1}{3}\right)-(0-0) = \frac{13}{24}.$

Page 354 – Exercise 7-42 (f) – insert "☺, no calculations required!" after statement.

Page 365 – lines 1-3 rewrite to read:

If we now make the substitution $z = \frac{1}{\sqrt{1-\rho^2}}(v-\rho u)$, then $dv = \sqrt{1-\rho^2}\,dz$, and

$$z^2 = \frac{1}{1-\rho^2}\left[(v-\rho u)^2\right],$$

Page 366 – lines 1-2 – rewrite to read:

Now we substitute $z = \frac{1}{\sqrt{1-\rho^2}}(u-\rho v)$. This implies that,

$$u = z\sqrt{1-\rho^2} + \rho v \text{ and } du = \sqrt{1-\rho^2}\,dz.$$

Page 372 - #4 – parts (i) through (k), rewrite to read:

(i) Find $V[X]$ and $V[Y]$.

(j) Find the covariance of *X* and *Y*

(k) Find the correlation ρ of *X* and *Y*

Page 383 – Exercise 8-4 – (b), Insert "(You may need a graphing calculator to calculate the definite integral)" after "Find the expected value of *Y*."

Page 389 – line 4 – replace (2,*x*) with (*x*,0).

Page 396 – fifth line of Table 8.1 – replace 2.47… with 2.47554183

Page 398 – Exercise 8-21 (b) – to read, "Calculate the sample mean and the sample standard deviation…

Page 398 – Exercise 8-23 – remove (see hint below) from (c) and add to (d)

Page 400 – last line of proof, replace $= 1 - \overbrace{\prod_{i=1}^{n} \Pr(X_1 > x)}^{\text{independence}}$ with $= 1 - \overbrace{\prod_{i=1}^{n} \Pr(X_i > x)}^{\text{independence}}$ (fix subscript in formula)

Page 405 – Exercise 8-25 – Second sentence should read, "Note that …" (replace "the" with "that")

Page 417 – Table at top of page should read, (subscripts in first column should be 1, not 2):

	$U_2 = 0$	$U_2 = 1$
$U_1 = 0$	$\frac{G(G-1)}{N(N-1)}$	$\frac{BG}{N(N-1)}$
$U_1 = 1$	$\frac{BG}{N(N-1)}$	$\frac{B(B-1)}{N(N-1)}$

Page 441 – Exercise 8-67 – replace “Jess” with “less” in (B), (C), (D).

Page 445 – Problem 10, replace “Recall …” with

“Recall that $\int_a^b xe^{-\alpha x}dx = \left(\frac{xe^{-\alpha x}}{-\alpha}\right)\Bigg|_a^b + \frac{1}{\alpha}\int_a^b e^{-\alpha x}dx$” (-alpha in first term)

ANSWERS TO TEXTBOOK EXERCISES

Page 713 – 1-17 – should be 0.0853

Page 715 Chapter 1 Sample Exam 5(b) should be 0.30283

Page 717 – 2-58 – (e) should be 0.9284

Page 718 – 3-19(e) delete

Page 718 – 3-21 interchange boys and girls

Page 720 – 4-10(a) should be 4/5

Page 723 – 5-20 (e) should be 0.5412

Page 724 – 5-50 – should be $MGF = \frac{1}{1-3t}$ mean = 3 variance = 9

Page 726 – 6-37(b) should be 0.1670

Page 730 – 7-53(b) – should be 0.75

Page 728 – 6-78(b) should be $2^{-\frac{1}{3}} \times \Gamma\left(\frac{4}{3}\right)$

Page 731 – Chapter 7 Sample Exam 1 – should be 1/6

Page 732 – 8-6(c) should be 0.4024

Page 732 – 8-17 – should be 8, 10, 11, 8, 10

Page 733 – 8-47 (b) should be 3.227