

## Errata

### Elementary Statistics for Geographers, 3<sup>rd</sup> Edition

#### Chapter 1

p. 31: 1<sup>st</sup> paragraph: 1<sup>st</sup> line: “20” should be “22”

#### Chapter 2

p. 41: Example 2-1: 1<sup>st</sup> paragraph: last line: “Chapters 2, 3, and 4 and in Chapter 14” should be “Chapters 2 and 3 and in Chapter 14”

p. 49: Replace second equation and following sentence with the following:

$$h = 3.5 s n^{-1/3}$$

where  $h$  is the histogram bin width, and  $s$  is the standard deviation of the data (see Chapter 3).

p. 54: Last paragraph: 4<sup>th</sup> line from bottom: “DO data in Figure 2-6” should be “DO data in Figure 2-4”

p. 59:

a: 1<sup>st</sup> paragraph: 7<sup>th</sup> line: “\$5,000” should be “\$50,000”

b: 2<sup>nd</sup> paragraph: last line: “the forth column is 50.” should be “the fourth column is 50.”

p. 69: Last line: “Unlike the quartile plot” should be “Unlike the quantile plot”

p. 70:

a: Example 2-7: 2<sup>nd</sup> paragraph: first line: “shown in the top” should be “shown in the left”

b: “ : “ “ : third line: “The bottom” should be “The right”

c: “ : “ “ : fifth line: “in the lower part of the figure” should be “in the right part of the figure”

p. 84: Figure 2-25: Legend: 2<sup>nd</sup> line: “0.4-0.4” should be “0.4-0.5”

#### Chapter 3

p. 100: Equation at bottom of page: “= 40” should be “= 41”

p. 100, formulas in numbered list should be:

1. First quartile rank:  $(n+1)/4$
2. Second quartile (median) rank:  $2(n+1)/4$
3. Third quartile rank:  $3(n+1)/4$

p. 100, table formulas should be:

$$(n+1)/4 = 13$$

$$2(n+1)/4 = 25$$

$$3(n+1)/4 = 38$$

p. 102: Next-to-last paragraph: 5<sup>th</sup> line: “all  $N$  observations in the population” should be  
“all  $N$  elements in the population”

p. 106: Last line: “Appendix 3b” should be “Appendix 3a”

p. 107: 4<sup>th</sup> line (not counting equations): “and Equation 3-5 can be rewritten as” should be  
“and Equation 3-4 can be rewritten as”

p. 110: Last paragraph: 2<sup>nd</sup> line: “The second column” should be “The third column”

p. 113: Equation 3-11: upper limit of summation should be  $N$ , not  $n$

p. 114: Equation 3-14: upper limit of summation should be  $N$ , not  $n$

p. 115: Equation 3-17: upper limit of summation should be  $N$ , not  $n$

p. 116: Last line: “small changes in  $s$ ” should be “small changes in  $\bar{X}$ ”.

p. 122: First full paragraph: 6<sup>th</sup> line: “from 67 to vehicles” should be  
“from 67 to 8 vehicles”

p. 128: First full paragraph: 3<sup>rd</sup> line: “There are two other ways” .... “other” should be omitted.

p. 132:

a: Figure 3-12: The triangle symbol should be lower, so that it is in line with point 8.

b: Figure 3-12: The open square symbol should be lower, so that it is in line with  $y = 42.05$ .  
(See p. 136.)

p. 136:

a: Equation 3-25: “ $\bar{X}$ ” should be “ $X_e$ ”.

b: Equation 3-25: “ $\bar{Y}$ ” should be “ $Y_e$ ”.

c: Below the Definition section: 2<sup>nd</sup> line: “Appendix 3A” should be “Appendix 3b”

p. 141: Last full paragraph: 8<sup>th</sup> line: “ $\pi(4^4)$ ” should be “ $\pi(4^2)$ ”.

p. 142: Fig. 3-21 (b): On the X-axis, “44” should be “4”.

p. 144: Last full paragraph: 6<sup>th</sup> line: “75” should be “7.5”.

p. 146:

a: Fig. 3-25 (a): The number in the last rectangle (bottom, right) is 9. It should be 6.

b: Fig. 3-25 (b): The number in the last rectangle (bottom, right) is 9. It should be 6.

p. 148: Second full paragraph: 7<sup>th</sup> regular line: “= 36” should be “= 33”.

p. 149: Rule 3: Last two lines: Need a multiplication dot at end of next-to-last line (for clarity).

p. 151:

a: #4: 2<sup>nd</sup> line: “ $Y^t = Y^{t1}$ ” should be “ $Y^t = Y^{t+1}$ ”

b: Last line of text before the Table: Change “TOL = 0.10” to “TOL = 0.50.”

## Chapter 4

p. 161: Figure 4-1, caption, 4<sup>th</sup> line: A black dot needs to be inserted before the words “denotes outside values”

p. 162: Last paragraph: First line: “As Figure 4-2 shows, the...” should be “As Figure 4-2 shows, as the...”

p. 167: 2<sup>nd</sup> paragraph: 4<sup>th</sup> line: Need an opening parenthesis at the start of the line.

p. 168: Equation 4-3: Denominator’s first term under the first square root sign: “ $X_i^{22}$ ” should be “ $\sum X_i^{22}$ ”

p. 171: Table 4-6: Last equation: The “5283.8” should be “5267.4”

p. 177: Last sentence: “we can substitute (4-11) into...” should be  
“we can substitute (4-10) into...”

p. 179: Figure 4-12: Y-axis: Tick mark for 20 appears to be extension of dashed line for  $y = 19.653$ . The tick mark should just be a tick mark, and the dashed line should hit a little below the tick mark.

p. 181: Sentence below Equation 4-14: “and  $y_i = Y_i = \dots$ ” should be “and  $y_i = Y_i - \dots$ ” (that is, the second equals sign should be a minus sign).

p. 185:

a: Table 4-10: Next-to-last column heading: The superscripted 2 should be after the closing parenthesis.

b: Table 4-10: Last line of equations: “ $r =$ ” should be “ $r^2 =$ ”

p. 187: 2<sup>nd</sup> to last line: “ $CV = 100.$ ” .  $S_{y,x} = S_y$ , not  $S_{y,x}$  equal to the mean of  $y$ .

p. 190: Equation 4-27: There are four instances where commas are needed in the subscripts:

a: Two instances of “ $_i$ ” that should be “ $_{,i}$ ”

b: Two instances of “ $_{-i}$ ” that should be “ $_{-,i}$ ”

p. 191:

a: Table 4-11: Equation below caption: First number in denominator is “187391” (but it should be “187319”).

b: Table 4-11: Equation below caption: The square root signs on the numbers 35.195 and 35.199 should be removed. Just leave  $(35.195)(35.199)$  in the denominator.

c: Last equation: There are four instances where commas are needed in the subscripts:

i. Two instances of “ $_i$ ” that should be “ $_{,i}$ ”

ii. Two instances of “ $_{-ki}$ ” that should be “ $_{-,ki}$ ”

p. 192: Equation 4-29:  $(Y-a)/(X-0) = a$  should be  $(Y-a)/(X-0) = b$

p. 193: Figure 4-17: On Y-axis: “ $Y_1$ ” should be “ $Y_2$ ”.

p. 194: Appendix 4b; 2<sup>nd</sup> line after Equation 4-30: “by differentiating Equation (4-39)” should be “by differentiating Equation (4-30)”

## Chapter 5

p. 208: Equation in middle of page: “39/62” should be “39/52”

p. 214: Figure 5-2: vertical axis should be labeled “ $F(x)$ ”

p. 214: Equation 5-17: “ $P(x_2)$ ” should be “ $P(x_1)$ ”

p. 221: First paragraph, last line: “card selection and coin toss” should be “coin toss and card selection”

p. 223: Table 5-7: (4 blocks of letters to move in this table): There should be 9 columns of TH-

combinations in this table. Currently column 8 is missing, which should go in the blank area between the current last two columns. As for letters to move:

a: In column 4, the 2-line block on the bottom (HTHT and HHTT) should be moved straight to the right into column 5.

b: In column 5, the 2-line block that includes HTH and HHT should be moved up by 3 lines and right by one column to take their place just above THH in column 6.

c: In column 7, the top line of letters, HH, should be moved up by one line.

d: In column 7, the next line of letters, HHH, should be moved up 4 lines and over to the right into column 8 (which is currently empty).

The final result should look something like this:

n = 1		T		H			
n = 2		TT		TH HT		HH	
n = 3		TTT		TTH THT HTT		HTH HHT THH	HHH
n = 4	TTTT	TTTH TTHT THTT HTTT		TTHH THTH HTTH THHT HTHT HHTT		THHH HTHH HHTH HHHT	HHHH

p. 224: Next-to-last line: Omit “and  $x = 2$ ,”

p. 225: 4<sup>th</sup>-to-last line: “fair coin, then  $\pi > 0.5$ ” should be “fair coin, then  $\pi = 0.5$ ”

p. 227:

a: Equation 5-28: “ $(1 - \pi)^{n-x}$ ” should be “ $(1 - \pi)^{n-x}$ ”

b: Equation 5-29: “ $(1 - \pi)^{n-x}$ ” should be “ $(1 - \pi)^{n-x}$ ”

c: Equation 5-29: Need a closing square bracket as in “ $E(X)]^2$ ”

d: Equations at bottom of page: First equation: “0.264” should be “0.0264”

p. 228: First full paragraph:

a: 4<sup>th</sup> line: “What if they are not known?” should be “What if  $\pi$  is not known?”

b: 5<sup>th</sup> line: “these parameters” should be “this parameter”

p. 229:

a: First full paragraph: First line: “0.25-mi squares.” should be “0.25-mi<sup>2</sup> squares.”

b: Line just below Equation 5-30: “ $\pi \frac{1}{4}$ ” should be “ $\pi = \frac{1}{4}$ ”

p. 232: Last equation: “0.821” should be “0.0821”.

p. 234:

a: Equation (5-38) should be Equation “(5-36)”

b: Equation that should be 5-36: Need a minus sign in front of the opening square bracket of the exponent:

$$e^{-1/2(\dots)}$$

p. 235:

a: Equation (5-36) should be Equation “(5-37)”

b: Equation (5-37) should be Equation “(5-38)”

c: First paragraph: first line: “ $\mu$ is” should be “ $\mu$  is”

p. 236:

a: First paragraph: fifth line: “ $\sigma_1 = 100$ ” should be “ $\sigma_1 = 10$ ”

b: Equation 5-40: In the exponent following the e, need a minus sign:

$$e^{-1/2(\dots)}$$

c: Last paragraph: 2<sup>nd</sup> line: “68.26%” should be “68.27%”

d: Last paragraph: 3<sup>rd</sup> line: “0.6826” should be “0.6827”

e: Last paragraph: Next-to-last line: “68.26%” should be “68.27%”

p. 237:

a: Figure 5-12 (c) Number at near bottom: “.6826” should be “.6827”

b: Figure 5-12 (c) Number at bottom: “.9544” should be “.9545”

c: Only paragraph: First line: “95.44%” should be “95.45%”

d: Only paragraph: Sixth line: “99.72%” should be “99.73%”

p. 238:

a: Example 5-3: 3<sup>rd</sup> line: “distances” should be “times”

b: Example 5-3: 8<sup>th</sup> line: “Using the third column” should be “Using the fourth column”

p. 242: Table 5-12: 3<sup>rd</sup> column: 2<sup>nd</sup> number: “0.79” should be “0.78”

p. 243:

a: Equation 5-45: Omit the extra middle segment. Should be “ $P(x, y) = P(x)P(y)$ ”

b: First full paragraph: Last sentence: “...covariance COV (X, Y) yet” should be:  
“...covariance COV (X, Y) = 0 yet”

p. 246:

a: 3<sup>rd</sup> line: “ $\rho_{xy} > 0$ ” should be “ $\rho_{xy} < 0$ ”

b: 5<sup>th</sup> line: “eight cases” should be “six cases”

## Chapter 6

p. 266: First full paragraph: 4<sup>th</sup> line: “83<sup>rd</sup> individual” should be “individual 83”

p. 274: Equation 6-9: The second x with the bar over it should be subscripted.

p. 281: Figure 6-11: Labels along x-axis: “z” should be “ $\bar{z}, \bar{X}$ ”

p. 284: First line in text: “16.4a” should be “6.14a”

p. 286:

a: Figure 6-16: Top right corner: “ $C_{INW}$ ” should be “ $C_{INW}$ ”

b: Figure 6-16: 4<sup>th</sup> line segment (the one with NW and 7 and 3): “NW” should be “W”

c: Figure 6-16: Last row of numbers that has: 10   0   7   200   78   122:

The “0” and “7” need to be transposed.

p. 291: #1: “Finite population correction factor” (9<sup>th</sup> entry in left-hand column in this list) is not referenced elsewhere and should be deleted.

p. 292: #11: 4<sup>th</sup> line: “space (0)” should be “space (O)” (that is, this should be a capital letter “oh,” not a zero).

## Chapter 7

p. 298: Equation near top of page: A closing square bracket is needed: Should be:

$$\text{MSE} = E(\theta_{\text{hat}} - \theta)^2 = [E(\theta_{\text{hat}}) - \theta]^2 + \dots$$

p. 301: Table 7-1: Last equation: Need parentheses around the “n – 1” to get “... / (n – 1)”

p. 302: Equation in middle of page: “S<sup>2</sup>” should be lower case “s<sup>2</sup>”.

p. 305: About 5<sup>th</sup> line from bottom at end: “0.25” should be “0.025”.

p. 307: Table 7-2:

a: Upper bound column: First row of three: The minus sign should be a plus sign.

b: Upper bound column: Second row of three: “1.65” should be “1.96”.

c: Values of bound...Lower column: First row of three: “14.688” should be “14.680”.

d: Values of bound...Upper column: First row of three: “17.312” should be “17.320”.

e: Interval width column: First row of three: “2.624” should be “2.640”

p. 311:

a: Second paragraph: 3<sup>rd</sup> line: “t-corresponding” should be “t corresponding”.

b: Table: Second column: First row: “12.806” should be “12.706”.

p. 312: First paragraph after Definition box: Second line: “7-4” should be “7-3”.

## Chapter 8

p.329: Equation 8-4: The second statement: “P(-P > A<sub>2</sub>)...” should be “P(P > A<sub>2</sub>)...”

- p. 330:
- a: Third regular line: “Using column 6 of Table...” It should read column 5.
  - b: Fifth line: The **comma** immediately after the  $z$  in “The other  $z$ -score,  $z_{.975}$ ,” should be omitted.
  - c: Sixth line: “(see Table A-3, column 3)”: column 3 should be column 4.
  - d: Equation 8-5: Second line of the 3-line equation: “ $A1 - 0.2 = 0.0784$ ” should be  

$$A1 - 0.2 = - 0.0784$$
- p. 336: Equation at bottom of page: More space is needed between the first 0.2 and the  $H_A$ . There are two separate statements here and they are run together.
- p. 339: Third-to-last line: “Using column 7...” should be “Using column 3...”
- p. 340: Case2: 2<sup>nd</sup> line: “Chapter 8” should be “Chapter 7”.
- p. 341: first text line: “From Table A-6” should be “From Table A-5”.
- p. 342: Bottom of page: Diagram should be two-tailed, similar to the diagram in Table 8-7 on p. 346. The right shaded tail should have a “ $z$ ” below the boundary and a “ $t$ ” below the  $z$ . Both shaded tails should be labeled on top with “ $PV/2$ ”.
- p. 344:
- a: Last paragraph: First line: “Table A-2” should be “Table A-1”.
  - b: Equation at bottom of page: Last number: “0.1970” should be “0.1798”.
- p. 345:
- a: First line: “a 20%” should read “an 18%”.
  - b: Section 8.4: Line 6: “Example 8-1” should be “Example 8-2”.
  - c: Section 8.4, Line 8: “is 0.0124.” should be “is 0.012.”
  - d: First equation in middle of page: “[3.28, 3.91]” should be “[3.29, 3.91]”
  - e: Section 8.4: 3<sup>rd</sup> paragraph: 2<sup>nd</sup> line: “0.0124” should be “0.012”.
- p. 347:
- a: In Figure 8-9, the lower bound 3.28 should be 3.29.
  - b: Figure 8-9: Caption: “Example 8-1.” should be “Example 8-2.”
- p. 349:  
 Further Reading: 3<sup>rd</sup> line: “Chapter 2” should be “Chapter 3”.

p. 350: #6:

a: "Table A-6" should be "Table A-5"

b: "Table A-5" should be "Table A-6"

## Chapter 9

p. 361:

a: 4th line from bottom: "Using this t-table and the row for 40 degrees of freedom" should be "Using this t-table and the row for 30 degrees of freedom"

b: 2<sup>nd</sup> line from bottom: "in the range [.005, .01]." should be "in the range [.009, .011]."

p. 362:

a: First paragraph: Next-to-last line: " $60/24.456 = 1.636$ " should be " $40/42.456 = 1.636$ "

b: Last equation: " $= 211397.851/7373.966$ " should be " $= 211397.85/7373.966$ "

c: After last equation: 2<sup>nd</sup> line: "for a one-tailed test and 28 df," should be "for a one-tailed test and 20 df,"

d: After last equation: 2<sup>nd</sup> line: "we find the PROB-VALUE to be  $< .005$ ." should be "we find the PROB-VALUE to be  $< .007$ ."

p. 364:

Last paragraph: First line: "Equation 9-9 estimates..." should be "Equation 9-8 estimates..."

p. 365:

a: Second paragraph: 4<sup>th</sup> line:

"Our null hypothesis is that the before-traffic volumes are either lower or ..." should be "Our null hypothesis is that the before-traffic volumes are either higher or ..."

b: The equation that starts with  $H_A$ : The " $<$ " should be " $>$ ".

c: The last equation: The " $S_d$ " should be " $s_d$ ". (lowercase s.)

p. 366: Figure 9-3:

a: The "2.136" should be "2.3136".

b: The " $t_{calc}$ " with the arrow is pointing to "153". It should point to "2.3136".

p. 367: First paragraph: 4<sup>th</sup> line: "0.016" should be "0.018".

p. 368: Last equation: "4.079" should be "4.081".

p. 372:

a: Last paragraph: 8<sup>th</sup> line from bottom: “four different  $\alpha$  levels: 0.10, 0.05, 0.025, and 0.01.” should read: “six different  $\alpha$  levels: 0.20, 0.10, 0.05, 0.02, 0.01, and 0.001.”

b: Last paragraph: 4<sup>th</sup> line from bottom: “for  $\alpha = 0.025$ .” should be “for  $\alpha = 0.05$ .”

## Chapter 10

p. 381:

a: Last paragraph: First line: “minus signs” should be “plus signs”

b: Last paragraph: Third line: “ $b = 9$ ” should be “ $b = 11$ ”

c: Last paragraph: Last line: “negative sign” should be “plus sign”

p. 382: Under Hypotheses section: Right column: In  $H_A$  statements: *two* cases where

“ $\neq$ ” should be “ $\neq$ ”.

p. 386:

a: The subscripts  $x$  and  $y$  that go with  $n$  and  $\eta$  should be consistently capitalized:

(i) Second paragraph, third line: “a sample of size  $n_y$ ” should be “a sample of size  $n_Y$ ”

(ii) Second paragraph, 7<sup>th</sup> line: “from 1 to  $n_x + n_y$ ” should be “from 1 to  $n_X + n_Y$ ”

(iii) Heading of table near bottom of page: First line:  
On **BOTH** left and right sides:

“Ranks when  $\eta_x$ ” should be “Ranks when  $\eta_X$ ”

p. 387: Last line: “ $h_y$ ” should be “ $\eta_Y$ ”

p. 388: Background section: First line: Need to capitalize the subscripts,  $x$  and  $y$ :  
“samples of size  $n_x$  and  $n_y$ ” should be “samples of size  $n_X$  and  $n_Y$ ”

p. 390: Two-Sample Number-of-Runs Test section: 3<sup>rd</sup> paragraph: 4<sup>th</sup> line:  
“ $n_x = 4, n_y = 5$ .” should be “ $n_X = 5, n_Y = 4$ .”

p. 391:

a: Last equation: “3.64” should be “3.58”

b: Paragraph after last equation: 1st line: “3.64” should be “3.58”

c: Paragraph after last equation: 1st line: “-1.181” should be “-1.201”

d: Paragraph after last equation: 2<sup>nd</sup> line: “-1.181” should be “-1.201”

e: Paragraph after last equation: 2<sup>nd</sup> line: “0.119.” should be “0.159.”

p. 392: Table 10-5: PROB-VALUE section: First line: The last R should be subscripted:

“ $H_0$  is rejected only if R is smaller than  $\mu_R$ , ...” should be

“ $H_0$  is rejected only if R is smaller than  $\mu_{R_s}$ , ...”

p. 395:

a: First full paragraph: 5<sup>th</sup> line: “15.3, 21.0, and 10.2.” should be “14.75, 20.75, 11.0.”

b: First full paragraph: 6<sup>th</sup> line: “16.5” should be “15.5”

c: Equation in middle of page: The NUMERATOR should be:

$$10(14.75 - 15.5)^2 + 10(20.75 - 15.5)^2 + 10(11.0 - 15.5)^2$$

d: Equation in middle of page: Right side: “= 7.5” should be “= 6.24”

e: First line below the big equation: “about .02.” should be “less than .05.”

p. 397:

a: Table 10.9 has numerical errors.

The body of the table should look something like this:

				5	1
				6	2
				7	3
				8	4
		9	5		
10	6				
11	7				
12	9	12	9	12	9
		14	11.5	14	11.5
15	13				
16	14				
17	15.5			17	15.5
18	17			19	18
20	19	21	20		
22	22	22	22	22	22
				23	24
27	25	28	26		
		29	27.5		
		29	27.5		
		31	29		
		58	30		

p. 400:

a: Table 10-11: PROB-VALUE section: 1<sup>st</sup> line: “Large values of  $\chi^2$  cast doubt” should be  
“Large values of  $X^2$  cast doubt”

b: Last line: “and draw no conclusion about  $f(Y)$ .” change “about  $f(Y)$ ” to “about the underlying population”.

p. 401:

a: First paragraph: 4<sup>th</sup> line: “ $\approx .373$ ” should be “ $\approx .376$ ”

b: Example 10-8: 2<sup>nd</sup> line: “divided the study area into 100” should be  
“divided the study area into 100”

p. 402:

a: 1<sup>st</sup> equation: Numerator: “ $e^{-1.5}$ ” should be “ $e^{-1.5}$ ”

b: Last paragraph: 2<sup>nd</sup> line: The lambda ( $\lambda$ ) with the hat on it should not have a hat.

c: Last paragraph: 5<sup>th</sup> line: “0.373” should be “0.375”

p. 405:

a: Table: F(z) column: 5<sup>th</sup> entry: “0.692” should be “0.691”

b: Table: Last column: 4<sup>th</sup> entry: “0.225” should be “0.255”

c: Table: Last column: 5<sup>th</sup> entry: “0.192” should be “0.191”

d: Just below the table: 2<sup>nd</sup> line: “ $\approx 0.2$ .” should be “= 0.156.”

p. 407: 4<sup>th</sup> line: “= .278” should be “=.277”

p. 408: Table: Multiple errors:

a: Column titles: “Crop Oats” should be “Oats”

b: Doreton row: Hay column: “8.0” should be “8.04”

c: Lamoile row: Oats column: Numerator: “(18)(25)” should be “(21)(29)”

d: Lamoile row: Oats column: “= 5.42” should be “= 7.34”

e: Valton row: Corn column: “(18)(29)” should be “(18)(25)”

f: Valton row: Corn column: “= 6.29” should be “=5.42”

g: Valton row: Oats column: Numerator: “(21)(29)” should be “(18)(29)”

h: Valton row: Oats column: “= 7.34” should be “= 6.29”

i: 4<sup>th</sup> line below table: “ $X^2 = 11.169$ ” should be “ $X^2 = 11.162$ ”

j: 5<sup>th</sup> line below table: “PROB-VALUE = 0.083,” should be “PROB-VALUE = 0.084,”

p. 417: 5<sup>th</sup> line: “bandwidth of 0.1 km.” should be “bandwidth of 1.0 km.”

p. 423: Example 10-14, first line: “Example 10-10 to” should be “Example 10-12 to”

p. 424: First line: “= 1, 2, ..., B” should be “i = 1, 2, ..., B”

p. 425: a: Line 7: “Note that column 2 of” should be “Note that column 6 of”

b: Line 10: “in column 2” should be “in column 6”

c: #2 in first set of procedures: “Draw a bootstrap sample of size B from the...” should be  
“Draw a bootstrap sample of size  $n$  from the...”

d: #4 in SECOND set of procedures: SECOND p statement ( $p_{\text{High}}$ ):

“ $p_{\text{High}} = \Phi(1.645 + .066) = .934$ ” should be “ $p_{\text{High}} = \Phi(1.645 - .066) = .943$ ”

e: #4 in Second set of procedures: Second  $\theta$  statement ( $\theta_{\text{High}}$ ):

“.934” should be “.943”

## Chapter 11

p. 440: 3<sup>rd</sup> regular line of text: “and therefore  $\hat{\sigma}_Y^2 = 6(67) = 402.$ ”

should have an “n” immediately before  $\hat{\sigma}_Y^2.$

p. 442:

a: Table 11-3: Last line: “= 14 +46 + 222” should be “= 14 +46 + 222 = 282”

b: Last paragraph: 3<sup>rd</sup> line: “the square of each observation to the grand mean” should be  
“the squares of the differences between each observation and the grand mean.”

p. 443:

a: Equation 11-12: The “ $\sigma_Y^2$ ” should have a hat (rooftop symbol) over the  $\sigma.$

b: Equation 11-13: The “ $\sigma_Y^2$ ” should have a hat (rooftop symbol) over the  $\sigma.$

Like:  $\hat{\sigma}_Y^2$

p. 450:

a: 3<sup>rd</sup> line: “for one  $ij$  pair” should be “for at least one  $ij$  pair”

b: Table: Under Hybrid 1: “78.333” should be “78.33”

p. 451:

a: BSS equations: 2<sup>nd</sup> BSS equation: “9[5.5556]” should be “9[5.5778]”

b: 2<sup>nd</sup> full paragraph: 1<sup>st</sup> line: “we must subtract each observation from” should be “we must subtract from each observation”

c: Last set of equations: 2<sup>nd</sup> line: “ $=[(80 - 80)^2 + \dots]$ ” should be “ $=[(80 - 81)^2 + \dots]$ ”

p. 452: Table 11-9: 2<sup>nd</sup> line from bottom, 3<sup>rd</sup> entry under Mean Sq: “50” should be “8”

p. 456: Homogeneity of Variances section: 2<sup>nd</sup> line: “Section 11.2” should be “Section 11.1”

p. 457: Appendix 11a: 4<sup>th</sup> line (including equation):

“tity  $(a + b)^2 = a^2 + 2ab + b^2]$  for the right-hand side:” should be  
“tity  $(a + b)^2 = a^2 + 2ab + b^2]$  for the right-hand side]:”

p. 459:

a: #4: Table heading: 2<sup>nd</sup> line: “(<99,999)” should be “( $\leq$ 99,999)”

b: #4: Table heading: 2<sup>nd</sup> line: “(>500,000)” should be “( $\geq$ 500,000)”

## Chapter 12

p. 477: 1<sup>st</sup> full paragraph: 3<sup>rd</sup> line from bottom: “sampling distribution of X...”  
The “X” should have a bar over it.

p. 478: Equation 12-4: Denominator: “ $\sum S_i^2$ ” should be “ $\sum X_i^2$ ”

p. 484: After Equation 12-10: 1<sup>st</sup> line: “The standard error of  $S_{\hat{Y}_0}$ ” should be

“The standard error of  $S_{\hat{Y}_0}$ ”

(Note that the zero is a subscript of a subscript.)

p. 485:

a: 2<sup>nd</sup> line: “0.1118” should be “0.1118X”

b: 1<sup>st</sup> set of equations: 3<sup>rd</sup> line: “ $= 0.7527(0.288) = .217$ ” should be

“ $= 0.7527(0.2887) = .217$ ”

c: 2<sup>nd</sup> set of equations: 1<sup>st</sup> line: Two subscripts need a space for clarity:

“ $n-2df$ ” should be “ $n-2\ df$ ”

d: 2<sup>nd</sup> set of equations: 1<sup>st</sup> line: The first incidence of “ $S_{\hat{Y}_0}$ ” should be “ $S_{\hat{Y}_0}$ ”.

e: Table 12-5: This table was mistakenly duplicated from Table 12-6.  
The correct Table 12-5 follows:

income	estimated_mean_trips	lowbound	up-bound	difference
30	4.157	3.388	4.926	1.538
36	4.828	4.206	5.449	1.243
42	5.499	4.982	6.016	1.034
47.25	6.086	5.602	6.570	0.968
54	6.840	6.303	7.378	1.075
63	7.847	7.117	8.576	1.459
66	8.182	7.372	8.992	1.620

p. 486: 1<sup>st</sup> line after Equation 12-11: “This standard error is almost identical to  $S_{\hat{Y}_0}$ .” should be

“This standard error is almost identical to  $S_{\hat{Y}_0}$ .”

p. 488: Table 12-7: Column headings: The second and third headings need to be switched ( $Y_i$  and  $X_i$ ).

p. 488: Table 12-7: Column headings: “ $X_i$ ” should be “ $X_i$ ”

## Chapter 13

p. 503:

a: Table 13-2: ANOVA section: MS column: 2<sup>nd</sup> number: “0.6985” should be “0.06985”

b: Last paragraph: 2<sup>nd</sup> line: “+0.0081” should be “+0.8031”

p. 509: 2<sup>nd</sup> paragraph: 5<sup>th</sup> line: “problem with only two variables.” should be  
“problem with only two independent variables.”

p. 514: 1<sup>st</sup> line: “X levels are those” should be “X level is that”

p. 515:

a: Table: 3<sup>rd</sup> column: “1.658” should be “1.732”

b: Table: 3<sup>rd</sup> column: “1.703” should be “2.000”

- p. 519:
- a: Second paragraph: 3<sup>rd</sup> line: “function of Equation 13-10” should be “function of Equation 13-9”
  - b: Equation 13-11: The “*i*” at the end of the equation should be subscripted.
- p. 525: Equation 13-13: The numbers “0.2667” and “0.2925” should be switched.
- p. 526: 1<sup>st</sup> line of text: “0.5221” should be “0.5210” (See Table 13-5.)
- p. 527:
- a: Table 13-7: 1<sup>st</sup> line (the R line): “0.9153” should be “0.8748”
  - b: Table 13-7: ANOVA section: 3<sup>rd</sup> line: SS column: “2.6339” should be “2.6329”
  - c: 1<sup>st</sup> line of text: “Equation 13-10” should be “Equation 13-12”
  - d: 3<sup>rd</sup> line of text: “90%” should be “75%”
  - e: 7<sup>th</sup> line of text: “has declined while” should be “has increased while”
  - f: 8<sup>th</sup> line of text: “has increased.” should be “has declined.”
- p. 528:
- a: Equation in middle of page: “= -0.04” should be “= -0.0414”
  - b: 1<sup>st</sup> full paragraph: 1<sup>st</sup> line: “by  $0.1239 - (-0.04) = 0.1639$ .” should be “by  $0.1239 - (-0.0414) = 0.1653$ .”
  - c: 1<sup>st</sup> full paragraph: 2<sup>nd</sup> line: “square all these differences and divide” should be “square all these differences, sum the squares and divide”
  - d: 1<sup>st</sup> full paragraph: 4<sup>th</sup> line: “predicted value of -0.04” should be “predicted value of -0.0414”
  - e: 1<sup>st</sup> full paragraph: 5<sup>th</sup> line: “ $10^{-04}$ ” should be “ $10^{-0414}$ ”
  - f: 1<sup>st</sup> full paragraph: 2<sup>nd</sup> line from bottom: “MSE of 0.0257” should be “MSE of 0.0258”

## Chapter 14

- p. 539: Example 14-1: 4<sup>th</sup> line: “Quadrats of uniform” should be “Quadrats of roughly uniform”

pp. 549-553: Example 14-4: This example has some errors in the beginning that get carried through the computations:

- a: p. 550: 1<sup>st</sup> and 2<sup>nd</sup> lines: “30 are black,  $n_B = 30$ , and 18 are white,  $n_W = 18$ ” should be “29 are black,  $n_B = 29$ , and 19 are white,  $n_W = 19$ ”
- b: p. 550: 1<sup>st</sup> paragraph: 2<sup>nd</sup> to last line: “map is 26.” should be “map is 27.”
- c: p. 550: 1<sup>st</sup> paragraph: 2<sup>nd</sup> to last line: “Republican is 0.625,” should be “Republican is 0.604,”
- d: p. 550: 1<sup>st</sup> paragraph: Last line: “Democrat is 0.375.” should be “Democrat is 0.396.”
- e: p. 551: Table 14-3: WW column: MO row: The “2” should be shifted right, so that it is in the BW column.
- f: p. 551: Table 14-3: Totals Row: “ $n_B = 30$ ” should be “ $n_B = 29$ ”
- g: p. 551: Table 14-3: Totals Row: “ $n_W = 18$ ” should be “ $n_W = 19$ ”
- h: p. 551: Table 14-3: Totals Row: “46” should be “44”.
- i: p. 551: Table 14-3: Totals Row: “52” should be “54”.
- j: p. 551: Table 14-3: Section at bottom: “ $p = 30/48 = 0.625$ ” should be “ $p = 29/48 = 0.604$ ”
- k: p. 551: Table 14-3: Section at bottom: “ $q = 18/48 = 0.375$ ” should be “ $q = 19/48 = 0.396$ ”
- l: p. 551: Table 14-3: Section at bottom: “ $WW = (0.5)(46) = 23$ ” should be “ $WW = (0.5)(44) = 22$ ”
- m: p. 551: Table 14-3: Section at bottom: “ $BW = (0.5)(52) = 26$ ” should be “ $BW = (0.5)(54) = 27$ ”
- n: p. 552: Equation 14-3: The subscript  $w$  in the numerator should be capitalized (but still subscripted).
- o: p. 553: Equation in middle of page: Numerator: “ $2(107)(30)(18)$ ” should be “ $2(107)(29)(19)$ ”
- p: p. 553: Equation in middle of page: “ $= 51.223$ ” should be “ $= 52.267$ ”
- q: p. 553: Second equation in middle of page: Under square root sign: “ $51.223 + 205.851 + 2390.191 - 2623.796$ ” should be “ $52.267 + 210.044 + 2493.313 - 2731.837$ ”

r: p. 553: Second equation in middle of page: “= 4.844” should be “= 4.877”

s: p. 553: Last equation in middle of page: Numerator: “26 – 51.223” should be “27 – 52.267”

t: p. 553: Last equation in middle of page: Denominator: “4.844” should be “4.877”

u: p. 553: Last equation in middle of page: “= - 5.207” should be “= - 5.181”

v: p. 553: After last equation in middle of page: 1<sup>st</sup> line of text: “score |-5.207|” should be “score |-5.181|”

p. 554: Equation near bottom of page: There should be a summing over j in the numerator, resulting in a double summation as in 14-7.

p. 555:

Last equation on page: This should be:  $B \sum_i \sum_j .5 \sum_i \sum_j (w_{ij} \cdot w_{ji})^2$

p. 556:

a: First equation on page: This should be:  $C \sum_i \sum_j \sum_k \sum_l w_{ij} w_{kl} \cdot \sum_j \sum_k \sum_l w_{ij} w_{kl}$

b: 2<sup>nd</sup> equation on page: This should be:  $K \frac{\sum_i (X_i - \bar{X})^4}{n\sigma^4}$

p. 557:

a: The online data set, caprecip, is missing the longitude column.

b: Table 14-4: Last column: 4<sup>th</sup> to last number: “34.1” should be “33.8”

c: Table 14-4: Last column: Last number: “33.8” should be “32.7”

d: Equation 2/3 down the page: There should be a summation over j in the denominator.

p. 558: Equation 1/3 of the way down the page: Denominator: “0.446” should be “0.0446”

p. 559:

a: Case 1: Last equation: “= 3.793” should be “= 3.789”

b: Case 2: Last equation: “= 2.523” should be “= 2.5”

p. 562: Table 14-6(a): Right lower corner: “= 2.799” should be “= 2.80”

p. 565:

a: Equation in middle of page: “103,349/1,783,445 = 0.0574” should be

$$“102,349/1,756,093 = 0.0583”$$

b: Line below the equation in middle of page: “and where these values” should be  
“and these values”

c: Equation 2/3 down on page: Numerator: “0.0574” should be “0.0583”

d: Equation 2/3 down on page: Denominator: “0.0047” should be “0.0035”

e: Equation 2/3 down on page: “= 1.894” should be “= 2.229”

p. 568: Line below Equation 14-16: “(0.0000014)(0.000458)” should be

$$“(0.0000014) (0.000458)”$$

(Shift the left number about 3 spaces to left to line it up under the 0.000005X above it.)

## Chapter 15

p. 582: Equation 15-2: After the first “ $\sigma$ ”:

The superscripted “2” should be shrunk since it’s an exponent, AND the subscripted “Y” (with a bar over it), should also be shrunk, since it’s a subscript.

p. 587: Figure 15-5: Equation at top of figure: “- .5a<sub>t</sub>” should be “- .5a<sub>t-1</sub>”

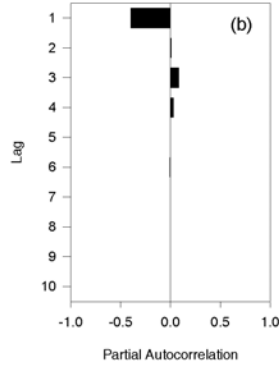
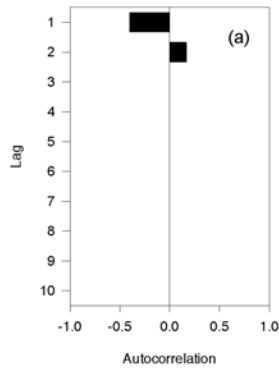
p. 593: First full line of text: End of line: “+...+ $\phi_p$ .” should be “+...+ $\phi_p\rho_{k-p}$ .”

p. 594:

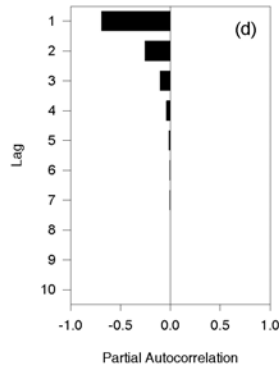
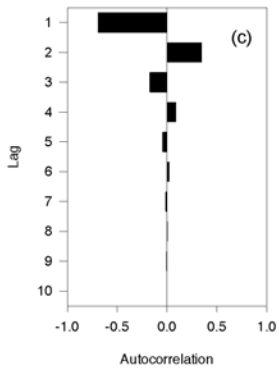
a: Figure 15-8(a): There be a second rectangle, pointing in the positive direction. (This is an MA(2) model.) The values for rho1 and rho2 are -0.4 and 0.1667

b: Figure 15-8(d): The diagram should be:

### MA(2)



### ARMA(1,1)



p. 596:

a: First equation near the top of the page: “RSS” should be “ESS” following chapter 4 definition.

b: Last equation: “ $= n \ln(\text{RSS})$ ” should be “ $= n \ln(\text{ESS})$ ”, following chapter 4 definition.

p. 597:

Fifth line from bottom: “about 35 times larger” should be “about 34 times larger”

p. 607: Next-to-last paragraph: Last line: “(see Problem 15.5)” should be deleted because the current problem does not actually apply here.

## Appendices:

### Appendix A-1:

p. 622: The equation at the top of the first page of Table A-1 should read:

Entry is Probability ( $\pi$ )

pp. 622-625: The header and footer on all four pages of Table A-1 should be a lowercase Greek pi ( $\pi$ ), not lowercase *p*.

p. 622:

a: Formula at top of table header: “p” should be “ $\pi$ ” (2 occurrences)

b: Column .03: n=9: x=2: “0.1262” should be “0.0262”

p. 623:

a: Column .10: n=5: x=1: “0.3280” should be “0.3281”

b: Column .10: n=5: x=4: “0.0004” should be “0.0005”

c: Column .30: n=5: x=1: “0.3601” should be “0.3602”

d: Column .30: n=5: x=4: “0.0283” should be “0.0284”

e: Column .40: n=4: x=4: “0;0256” should be “0.0256”

f: Column .50: n=5: x=0: “0.0312” should be “0.0313”

g: Column .50: n=5: x=1: “0.1562” should be “0.1563”

h: Column .50: n=5: x=4: “0.1562” should be “0.1563”

i: Column .50: n=5: x=5: “0.0312” should be “0.0313”

j: Column .50: n=6: x=5: “0.0938” should be “0.0937”

k: Column .50: n=8: x=1: “0.0312” should be “0.0313”

l: Column .50: n=8: x=7: “0.0312” should be “0.0313”

p.625: The column headings should be:

.1 .15 .20 .25 .30 .35 .40 .45 .50

p. 625: The column footers should be:

.90 .85 .80 .75 .70 .65 .60 .55 .50

## Appendix A-2

p. 626:

a: Top table: Heading Row: The numbers 0.01 through 1.0 should be:

.10 .20 .30 .40 .50 .60 .70 .80 .90 1.0

b: Top table: Column .30: X=4: “.0002” should be “.0003”

c: Bottom table: Column 7.0: X=12: “.0264” should be “.0263”

d: Footnote should say “Table entries are  $P(X = x)$  for various values of  $x$ .”

## Appendix A-3

p. 627: Next-to-last column: 3<sup>rd</sup> entry: “0.760” should be “0.758”

## Appendix A-4

p. 628: Heading Row: 2<sup>nd</sup> number: “.05” should be “.05”

## Appendix A-5

p. 630: Column under 100: 5<sup>th</sup> entry: “.395” should be “.185”

## Appendix A-6

p. 631: Column under 1: 7<sup>th</sup> entry: “.4'70” should be “.470”

## Appendix A-7

p. 633:

a: Equation 2/3 down page: “ $H_A: s_1^2 = s_2^2$ ” should be “ $H_A: s_1^2 \neq s_2^2$ ”

b: Last line: “(see page 000)” should be “(see page 637)”

p. 634:

a: Column under 5: 6<sup>th</sup> entry: “.2,305,620” should be “.2,305,619”

b: Column under 8: 2<sup>nd</sup> group of numbers: Last number: “.1,999.38” should be “.1,999.37”

c: Column under 9: 6<sup>th</sup> entry: “.2,409,138” should be “.2,409,137”

p. 635:

a: Column under 24: 5<sup>th</sup> entry: “24,939.56” should be “24,939.57”

b: Column under 24: 6<sup>th</sup> entry: “2,493,990” should be “2,493,991”

c: Column under 30: 6<sup>th</sup> entry: “2,504,396” should be “2,504,397”

d: Column under 60: 6<sup>th</sup> entry: “2,525,348” should be “2,525,347”

e: Column under 120: 6<sup>th</sup> entry: “2,535,890” should be “2,535,891”

### **Appendix A-8**

pp. 640-641:

a: Table Heading: First line: “ $P(\chi^2 > \chi^2)$ ” should be “ $P(\chi^2 > X^2)$ ”

b: First column heading: “ $\chi^2$ ” should be “ $X^2$ ”