

These corrections for *Probability and Statistical Inference*, seventh edition by Robert V. Hogg and Elliot A. Tanis, ISBN 0-13-146413-2, have been submitted by users of this book. We thank all of them. If you find additional errors, please send them to tanis@hope.edu. Actually, some of these “corrections” are given for clarity.

- Page 13, line 16, add the sentence: Such figures are called Venn diagrams.
- Page 54, the last line,

$$= \frac{672}{672 + 1899848} = 0.0000354.$$

should be changed to

$$= \frac{672}{672 + 1,899,848} = 0.000354.$$

- Page 111, in Exercise **2.5-12** the display should be

$$P(X > k + j | X > k) = P(X > j),$$

- Page 112, line 3 from the bottom in Exercise **2.5-24(a)**,
replace having the first miss after 12 attempts?
with having the first miss on the 13th attempt or later?
- Page 124, in Exercise **2.6-21 (b)**,
replace what is the expected penalty that the airline will pay?
with what is the expected payout (penalty plus ticket refund) that the airline will pay?
- Page 146, in Figure 3.2-3(b) (on the right), $g(y)$ **should be** $G(y)$
- Page 154, line 6 from the bottom, the word **is** **should be** **is**
- Page 170, Exercise **3.4-8(b)**, $\lambda w = 16$. **should be** $\lambda w = 8$.
- Page 174, line 9, Example 3.5-1 with $= e^X$, **should be** Example 3.5-1 with $Y = e^X$,
- Page 217, in Figure 4.3-1(b), the lower $g(x|2)$ **should be** $g(x|1)$
- Page 237, Exercise 4.4-8
(b) Show that the beta p.d.f. has a mode at $x = (\alpha - 1)/(\alpha + \beta - 2)$.
should be
(b) When $\alpha > 1$, $\beta > 1$, show that the mode is at $x = (\alpha - 1)/(\alpha + \beta - 2)$.
- Page 267, in the third line of the display, the = sign **should be** a + sign
- Page 280, Exercise 5.2-23, lines 3 and 5: that 12 ounces **should be** than 12 ounces. (2 places)
- Page 312, line 9 from the bottom, Section 3.7 **should be** Section 2.6.

- Page 314, Figure 5.7-1: the captions under Figure 5.7-1(b), (c), and (d) are not correct and do not agree with the figure. Here are the corrections:

Figure 5.7-1(b): $b(50, 1/10)$ (shaded); Poisson, $\lambda = 5$ **should be** $b(10, 1/2)$ (shaded); Poisson, $\lambda = 5$

Figure 5.7-1(c): $b(100, 1/20)$ (shaded); Poisson, $\lambda = 5$ **should be** $b(20, 1/4)$ (shaded); Poisson, $\lambda = 5$

Figure 5.7-1(d): $b(200, 1/40)$ (shaded); Poisson, $\lambda = 5$ **should be** $b(50, 1/10)$ (shaded); Poisson, $\lambda = 5$

- Page 336, add the following sentence before lines 13 and 14:

It can be shown that $L''(\bar{x}) < 0$ so that $L(\bar{x})$ is a maximum.

- Page 337, line 19, bold face the words maximum likelihood estimators *so that they become maximum likelihood estimators*
- Page 337, line 12 from bottom, boldface maximum likelihood estimators so it reads as follows: are **maximum likelihood estimators** of $\theta_1, \theta_2, \dots, \theta_m$, respectively;
- Page 342, line 10 from the bottom **and** line 2 from the bottom, replace the word population **with (for clarification)** the word distribution
- Page 343, line 14, replace the word population **with (for clarification)** the word distribution
- Page 357, line 5, replace the word items **with** the word observations
- Page 362, Exercise **6.4-9 (b)**, Determine a point estimates of σ^2 and σ . **should be** Determine point estimates of σ^2 and σ .
- Page 407, line 3 from the bottom, techniques is safer **should be** techniques are safer
- Page 408, Exercise **6.10-4 (a)**, 96.14% **should be** 94.26%
- Page 430, line 4 from the bottom, the last letter k **should be** n so that it reads $j = 1, 2, \dots, n$.
- Page 464, the display in line 6,

$$\left(\frac{1}{\theta_2}\right)\left(\frac{1}{\sqrt{2\pi\theta_2}}\right)^n e^{-\sum_{i=1}^n \left(\frac{x_i - \theta_1}{\theta_2}\right)^2 / 2}.$$

should be changed to

$$\left(\frac{1}{\theta_2}\right)\left(\frac{1}{\sqrt{2\pi\theta_2}}\right)^n e^{-\sum_{i=1}^n (x_i - \theta_1)^2 / 2\theta_2}.$$

- Page 473, line 17 from the bottom: for brevity, p -value. The **p -value** *should be replaced with* for brevity, **p -value**. The p -value
- Page 473: The correction for the first printing above was made on this page correctly. However, 4 new errors were introduced in the second printing.
 - The running head **should be** Section 8.1 (not Section 7.1).
 - In line 8, Table ?? **should be** Table 8.1-1.
 - The caption for the table **should be** Table 8.1-1 (not Table 7.1-1).
 - In line 11 from the bottom, Example ?? **should be** Example 8.1-1.
- Page 531, line 3 of Exercise 8.5-12, $\bar{x} = 42.4$ **should be** $\bar{x} = 42.2$.
- Page 534, line 17, in the display for \hat{p}_i ,
 $j = 1, 2, \dots, k - 1$, **should be** $i = 1, 2, \dots, k - 1$,
- Page 540, line 16, replace the word calculations **with** the word attributes
- Page 586, in the display, lines 14, 15, 16, and in the display 6 lines from the bottom, each of the denominators should be 184,756 rather than 84,756. Thus

$$\begin{aligned}
 P(R = 2) &= \frac{2}{84,756}; & P(R = 3) &= \frac{18}{84,756}; \\
 P(R = 4) &= \frac{162}{84,756}; & P(R = 5) &= \frac{648}{84,756}; \\
 P(R = 6) &= \frac{2592}{84,756}; & P(R = 7) &= \frac{6048}{84,756}.
 \end{aligned}$$

should be

$$\begin{aligned}
 P(R = 2) &= \frac{2}{184,756}; & P(R = 3) &= \frac{18}{184,756}; \\
 P(R = 4) &= \frac{162}{184,756}; & P(R = 5) &= \frac{648}{184,756}; \\
 P(R = 6) &= \frac{2592}{184,756}; & P(R = 7) &= \frac{6048}{184,756}.
 \end{aligned}$$

and

$$p\text{-value} = P(R \leq 6) = \frac{3422}{84,756} = 0.0185.$$

should be

$$p\text{-value} = P(R \leq 6) = \frac{3422}{184,756} = 0.0185.$$

- Page 666, line 12, $\int_0^b xe^{-1} dx = \dots$ **should be** $\int_0^b xe^{-x} dx = \dots$
- Page 686, $P(Z \leq 1.51) = 0.9345$ rather than 0.9545.
- Page 702, Exercise 1.1-11(c), the second number, 0.173; **should be** 0.273;
- Page 707, solution to **2.6-21 (b)**, **the answer should be**
2.6-21 (b) \$ 598.56 using binomial, \$ 613.90 using Poisson approximation and Table III.
- Page 707, **2.6-23 (a)** 1.941; **should be** **2.6-23 (a)** 2.681;
- Page 708, in the answer for **3.1-17 (b)**, **delete** 131.3, so the answer is now:
3.1-17 (b) 7.0, 2.575, 131.45, 131.47, 3.034.
- Page 711, Exercise 4.2-9(c) **should be** (c) $E(C) = 34.70$.
- Page 719, Exercise 6.6-7: The current answer uses only the first 15 numbers because 471 is missing from the CD-ROM. The correct answer is:
6.6-7 (a) [142.72, 386.10]; **(b)** $\bar{x} = 220.69, s = 200.27$, yes.
- Page 721, in the answer for **6.11-7**, $\frac{\hat{\alpha} - \alpha}{\sqrt{\hat{\sigma}^2/(n-1)}}$ **should be** $\frac{\hat{\alpha} - \alpha}{\sqrt{\hat{\sigma}^2/(n-2)}}$
- Page 722, Exercise **6.14.1(c)**, $1/5$. **should be** $2/n$.
- Page 723, in the answer for **8.2-11 (a)**, $\chi^2 \leq 36.42$; **should be** $\chi^2 \geq 36.42$;
- Page 725 in the answer for Exercise 8.7-7, $14.757 > 4.43$, reject H_0 . **should be** $14.757 > 2.87$, reject H_0 .

Here are some corrections for the *Instructor's Solutions Manual*.

- Here are the correct answers for Exercise **1.4-10**, page 5:

(a) $P(WWW) = \frac{1}{1140}$.

(b) The probability that your opponent wins on his second draw is $\frac{1}{380}$.

(c) The probability that you win if you draw first is $\frac{35}{76}$.

(d) If you draw second, the probability that you win is $1 - \frac{35}{76} = \frac{41}{76}$.

- Page 107, Exercise **7.3-6**,

$g(\theta_1, \theta_2 | x_1 = 3, x_2 = 6)$ **should be** $g(\theta_1, \theta_2 | x_1 = 3, x_2 = 7)$