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 $L''(\theta) < 0$ so that $L(\theta)$ 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 $\theta_1, \theta_2, \ldots, \theta_m$, 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 $\sigma^2$ and $\sigma$. should be Determine point estimates of $\sigma^2$ and $\sigma$.

• 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 $j = 1, 2, \ldots, n$.

• Page 464, the display in line 6,

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

should be changed to

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

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• 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, $x = 42$ should be $x = 42$.2.

• Page 534, line 17, in the display for $\hat{p}_{ij}$, $j = 1, 2, \ldots, k - 1$, should be $i = 1, 2, \ldots, k - 1$.

• 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

$$P(R = 2) = \frac{2}{84,756}; \quad P(R = 3) = \frac{18}{84,756};$$

$$P(R = 4) = \frac{162}{84,756}; \quad P(R = 5) = \frac{648}{84,756};$$

$$P(R = 6) = \frac{2592}{84,756}; \quad P(R = 7) = \frac{6048}{84,756};$$

should be

$$P(R = 2) = \frac{2}{184,756}; \quad P(R = 3) = \frac{18}{184,756};$$

$$P(R = 4) = \frac{162}{184,756}; \quad P(R = 5) = \frac{648}{184,756};$$

$$P(R = 6) = \frac{2592}{184,756}; \quad P(R = 7) = \frac{6048}{184,756};$$

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, \[ \int_0^b x e^{-1} \, dx = \ldots \text{ should be } \int_0^b x e^{-x} \, dx = \ldots \]

• 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, \( \frac{\hat{\alpha} - \alpha}{\sqrt{\sigma^2/(n - 1)}} \text{ should be } \frac{\hat{\alpha} - \alpha}{\sqrt{\sigma^2/(n - 2)}} \)

• 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, 
  \( g(\theta_1, \theta_2 \mid x_1 = 3, x_2 = 6) \) should be \( g(\theta_1, \theta_2 \mid x_1 = 3, x_2 = 7) \)