

Errata Sheet for HMC, 6th Edition

Current as of 19 January 05

First of all, both Bob and I apologize for the typographical errors in the 6th edition. Second, we would like to thank all of you that have sent the typos to us. Please continue to do so, (just e-mail joe@stat.wmich.edu or joemckean@yahoo.com).

I will try to remember to change the date above when I add newly found typos.

Preface

1. Page *xii*, line -2: change cite to site
2. Add Joe McKean's e-mail address: joe@stat.wmich.edu

1 Chapter 1

1. Page 2, line 17: change and to an.
2. Page 12, line 5: Change (2) to (3).
3. Page 18, line 14: Change Exercise 1.5. to Exercise 1.2.8.
4. Page 26, line 7: Change first is to it.
5. Page 26, line -9: Change 0.096 to 0.96.
6. Page 29, Exercise 1.4.3: Change two occurrences of suite to suit.
7. Page 35, line -7: Change **appears in Figure 1.5.1 Note that given to is similar to that of Figure 1.5.1. Given**
8. Page 36, Change caption of Figure 1.5.1 to **Cdf of the upface of a roll of a fair 6-sided die.**
9. Page 40, Exercise 1.5.4: Change second occurrence of $F(x)$ to $p_X(x)$.
10. Page 44, Exercise 1.6.5: Change X to Z .
11. Page 46, line 1: Change 1.5.2 to 1.5.3.
12. Page 55, line -3: Change \mathcal{D}_X to \mathcal{S}_X .
13. Page 55, line -3: Change \mathcal{D}_Y to \mathcal{S}_Y .
14. Page 66, Exercise 1.9.11: Space between ... 3, 11, and

2 Chapter 2

1. Page 81, line 12: $\frac{x_1}{x_2}$ not $\frac{x_2}{x_2}$.
2. Page 83, line -7: pmf not pdf.
3. Page 83, line -3: Example 2.1.3 not Example 2.1.2.
4. Page 105, Example 2.4.3 in Figure caption.
5. Page 112 line -13: The leftside of the expression is $E[(X - \mu_1)(Y - \mu_2)]$.
6. Page 120: In Remark 2.6.1 change pdf to pmf (3 times).
7. Page 121, line 9: Replace Section 2.3 with Section 2.4.
8. Page 131, line -16: $Y \in B$ not $Y \in \mathcal{B}$.

3 Chapter 3

1. Page 139, line 9: $[(1 - p_2) + p_2 e^{t^2}]^n$ not $[(1 - p_2) + p_x e^{t^2}]^n$.
2. Page 141, Exercise 3.1.16: moment not monemt.
3. Page 142, Exercise 3.1.23: Replace $P(X > k + j | X > k) = P(X > j)$ by $P(X \geq k + j | X \geq k) = P(X \geq j)$.
4. Page 143, line -13: Want ...accidents in a unit
5. Page 146, Example 3.2.3: Change the two occurrences of $\frac{1}{100}$ with $\frac{1}{1000}$.
6. Page 148, Exercise 3.2.13: Change pdf to pmf and the second (a) to (b).
7. Page 156, Example 3.3.7: In the expression for Y_i , X_n should be X_{k+1} .
8. Page 176, Example 3.5.2: Want: which was given in ... Example 3.5.1.
9. Page 176, line -6: Want: $(2.576)\sigma_2\sqrt{1 - \rho^2}$.
10. Page 182, top of page: In Part (e) should be: Show that \widehat{beta} solves ... and put a square on the last norm, i.e., $\min_{\mathbf{b} \in R^p} \|\mathbf{Y} - \mathbf{X}\mathbf{b}\|^2$.
11. Page 194, Exercise 3.7.4: Change first and third occurrences of pdf to pmf.

4 Chapter 4

1. Page 204, line -16: It is: Chung (1974)
2. Page 218, Exercise 4.3.2: Change first order statistic to minimum.
3. Page 218, Exercise 4.3.3: Change n th order statistic to maximum.
4. Page 218, Exercise 4.3.4: Change second order statistic to second smallest item.

5 Chapter 5

1. On top of page 245 drop the order statistic parentheses; i.e., change $Y_{(i)}$ to Y_i .
2. Exercise 5.2.14: Last line: Change $(Y_1 + Y_2)/2$ to $(Y_1 + Y_3)/2$.
3. Page 255, line 15: Change (5.4.2) to (5.4.3).
4. Page 255, line 21: Change σ_T to 1.
5. Page 257, line -18: Change (5.4.4) to (5.4.7).
6. Page 269, line -11: Change hence to Hence.
7. Page 278, line 7: Should be: defined by $(n - 1)S^2/\sigma_0^2$.
8. Page 280, line 13: Change the two occurrences of pdf to pmf.
9. Page 281, line 5: Need an ending brace } on the first subset.
10. Page 281, line -5: the beginning of the integrand should be: $\frac{1}{\sqrt{2\pi}\sigma}$.
11. Page 298, line -14: First symbol should be \mathbf{x} .
12. Page 300, lines 2 and 3: We omitted the degrees of freedom on the χ^2 -critical values.
13. Page 306. Make the same correction as the last in Exercise 5.9.2, Part (a). The three occurrences should read: $[\chi_{2n}^2]$.

6 Chapter 7

1. Page 369, line 14: Bracket is needed, i.e., $E[\delta(Y)] = \theta$.
2. Page 373, line 6: being not begin.
3. Page 379, line 9: Extra parenthesis on first factor on right side; i.e., $[e^{-3 \max x_i + 3\theta}]$.
4. Page 379, line 14: Larger braces on last factor on right side of the expression.
5. Page 382: In Example 7.3.1, need to indicate that $\theta > 0$; i.e.,

$$f(x; \theta) = \begin{cases} \theta e^{-\theta x} & 0 < x < \infty, \theta > 0 \\ 0 & \text{elsewhere.} \end{cases}$$

6. Page 386, line 14: Towards end of the line: ... recognize the integral
7. Page 390, line -13: Should be: Let X
8. Page 401, line 3: Want (7.7.2) not (7.7.5).

9. Page 404, line -7: Want (7.7.2) not (7.7.5).
10. Page 405, line 1: Delete are.
11. Page 411, line 10: is instead of equal.
12. Page 412: In Theorem 7.9.1, must state that Y_1 is a sufficient statistic.
13. Page 416: In Theorem 7.9.1, line 2: Delete: distribution $N(\theta, \sigma^2)$, $-\infty < \theta < \infty$.
14. Page 417, line -6: Change thta to that.
15. Page 418, line 2: The pdf is
16. Page 418, line 4: Delete: find.

$$f(x; \theta) = \begin{cases} \frac{1}{2}\theta^3 x^2 e^{-\theta x} & 0 < x < \infty \\ 0 & \text{elsewhere.} \end{cases}$$

7 Chapter 8

1. Page 428: In Exercises 8.1.7 and 8.1.9, for more consistent notation with the text replace expressions like $P(X_1, X_2, \dots, X_n) \in C; H_0$ with $P_{H_0}(X_1, X_2, \dots, X_n) \in C$.
2. Page 434, line 4: change with level is to the level.
3. Page 438: In the last two paragraphs, change the three occurrences of Chapter 5 to Chapter 6.
4. Page 459, line 13: add a right parenthesis before last bracket in the expression for π'' .

8 Chapter 9

1. Page 465, line 5: Change The examples ... to Examples ...
2. Page 467, line 6: Change ... are independent and the ... to ... are independent and that
3. Page 472, line 7: Change ... may be used with ... to ... may be tested with
4. Page 482, line 15: Change ... which concerned ... to ... which was concerned ...
5. Page 488: Last sentence of Exercise 9.5.8: Change ... for last ... to ... for the last ...
6. Page 491, line -6: should read ... mles, $\hat{\sigma} = \sqrt{\hat{\sigma}^2}$.

7. Page 493, line -16: should read: solved later in Chapter 12 and the present case is a special instance.
8. Page 493, line -3: should read: i.e.,
9. Page 495, Line -4: should read $N(\alpha + \beta(x_0 - \bar{x}), \sigma^2)$
10. Page 495, Line -4: should read $N(\alpha + \beta(x_0 - \bar{x}), \sigma^2)$
11. Page 497: In Part (b) of Exercise 9.6.11, change . . . is vector . . . to to . . . is the vector
12. Page 497, line -6, Last \mathbf{X} should be \mathbf{X}' .
13. Page 501, line 9, Change Section 4.9 to Section 4.5.
14. Page 502, line -10, Change Theorem 3.5.1 to Theorem 2.6.2.
15. Page 505, line -8, should be . . . $(1 - 2t)^{-r/2}$; (delete the i).
16. Page 506, line -4, should be of not fo.
17. Page 510: Next to last line in Remark 9.9.2 capitalize t in Theorem 9.9.1, . . .
18. Page 512: Last line in Exercise 9.9.1 change . . . are independent . . . to . . . independent
19. Page 513, line 3: change . . . are independent. What . . . to . . . are independent, what

9 Chapter 10

1. Page 570, line 10, Change $Y_i + x_i\beta$ to $Y_i + (x_i - \bar{x})\beta$.
2. Page 570, line -10, Change are to is.

10 Chapter 11

1. Page 597, line -14 and -15: Change the two occurrences of $t_{\alpha/2}$ to $t_{\gamma/2}$.
2. Page 602, line -6, Eliminate which.

11 Tables of Distributions

1. Page 673, The column under 0.050 is wrong (actually they are 0.50 (median) quantiles). Correct values can be obtained from R as follows:

```
x=qchisq(.05,1:30)
y=round(1000*x)/1000
y
[1] 0.004 0.103 0.352 0.711 1.145 1.635 2.167 2.733 3.325 3.940
[11] 4.575 5.226 5.892 6.571 7.261 7.962 8.672 9.390 10.117 10.851
[21] 11.591 12.338 13.091 13.848 14.611 15.379 16.151 16.928 17.708 18.493
```

Answers

1. Page 683, Remove // in Exercise 1.2.1.

2. Page 683, The answer to Exercise 1.4.4 is

$$2 \frac{13 \cdot 12 \cdot 26 \cdot 25}{52 \cdot 51 \cdot 50 \cdot 49}.$$

3. Page 683, The answer to Exercise 1.4.20 is $1/7$.

4. Page 684, The answer to Exercise 1.4.28 is $\frac{5 \cdot 4 \cdot 5 \cdot 4 \cdot 3}{10 \cdot 9 \cdot 8 \cdot 7 \cdot 6}$.

5. Page 685, In the answer to Exercise 2.2.3 the upper bound on y_i is ∞ .

6. Page 685, The second answer to Exercise 2.3.1 should be

$$\frac{6x_1^2 + 6x_1 + 1}{2(6x_1^2 + 3)^2}$$

7. Page 685, The answer to Part (d) of Exercise 2.3.2 should be $\frac{449}{1536}$.

8. Page 685, The answer to Part (a) of Exercise 2.3.11 should be $\frac{1}{x_1}, 0 < x_2 < x_1 < 1$;

9. Page 686, The answer to Exercise 3.5.6 should be (38.2, 43.4).

10. Page 687, The answer to Part (c) of Exercise 5.1.2 should be $\frac{p(1-p)}{n}$.

11. Page 688: 5.4.8 should be 5.4.9.

12. Page 688: The answer to Part(a) of Exercise 6.3.15 is $\left(\frac{1}{3\bar{x}}\right)^{n\bar{x}} \left(\frac{2}{3(1-\bar{x})}\right)^{n-n\bar{x}}$.

13. Page 689, Answer to Exercise 7.4.2 is (a) X ; (b) X .

14. Page 689, Answer to (a) of Exercise 7.4.9 is $\max\{-Y_1, 0, Y_n\}$;

15. Page 690: Answer to (b) of Exercise 9.5.9 is $15.538 > 3.84$, reject H_B .

16. Page 690: Answer to (a) of Exercise 9.8.4 is $\sum \sigma_i^2/n^2$.