

## Errata and Updates for ASM Exam MAS-II (Unnumbered Edition) Sorted by Page

[7/26/2023] On page 36, replace the solution to Example 4C part 2 with

The median cannot be calculated by hand. Using Excel's `BETA.INV(0.5, 4, 8)` we get approximately **0.324**.

[3/14/2023] On page 99, in exercise 10.3, on the second line, an  $x$  is missing in the exponent. The formula should read

$$f(x | \lambda) = \lambda e^{-\lambda x} \quad x > 0$$

Two lines after the formula, change 0.000001 to 0.0000001.

[3/13/2023] On page 99, in exercise 10.4, on the second line, an  $x$  is missing in the exponent. The formula should read

$$f(x | \lambda) = \lambda e^{-\lambda x} \quad x > 0$$

[8/26/2024] On page 140, on the third line from the bottom, change 7.291167 to 7.291667. On page 141, change 7.291167 to 7.291667 on lines 3, 4, and 5. Change 16.3610 to 16.3605 on lines 5 and 6. However, the final answer remains the same to two decimal places.

[3/13/2023] On page 172, two lines above equation (16.2), in the fraction, put a bar above  $X_i$  so that it reads

$$\frac{\sum_{j=1}^n (X_{ij} - \bar{X}_i)^2}{n - 1}$$

[11/1/2022] On page 200, in the paragraph beginning with “1.”, on the last line, change “would it” to “would fit”.

[8/22/2023] On page 203, on the third line of Example 17A, change “a linear mixed models” to “a linear mixed model”. In part 2 (the last line of the page), change “random student” to “random tenth grade student”.

[11/1/2022] On page 231, the last line of the solution to exercise 19.6, “Later on in the course ...”, belongs after the solution to exercise 19.5, and is not correct for exercise 19.6.

[8/22/2023] On page 234:

- Three lines above the table before Section 26.2, change “Kenward-Rogers” to “Kenward-Roger”
- In the table before Section 26.2, change “Kenwood-Rogers” to “Kenward-Roger”.

[8/22/2023] On page 237, in the paragraph beginning “**Newton-Raphson (N-R)**”, on the first line, change “maximizes” to “minimizes”.

[8/22/2023] On page 244, on the second line of Example 21D, change “nor” to “not”.

[8/22/2023] On page 245, four lines under equation (21.3), change “Kenward-Rogers” to “Kenward-Roger”.

[8/17/2022] On page 268, in exercise 24.2, on the first line, change “variable” to “variables”.

[8/17/2022] On page 272, in the solution to exercise 24.1, on the line under “Level 1”, delete the duplicate “ $u_{3k} \times \text{VAR}_{3k}$ ”.

[8/17/2022] On page 273, replace the solution to exercise 24.2 with

### Level 1

$$\text{ACCIDENTS}_{ij} = b_0 + b_1 \times \text{SEX}_{ij} + b_2 \times \text{TICKETS}_{ij} + b_3 \times \text{ACC}_{ij} + \varepsilon_{ij}$$

## Level 2

$$b_0 = \beta_0 + \beta_4 \times \text{REGISTRATIONS}_j + \beta_5 \times \text{ROADMILES}_j + u_{0j}$$

$$b_1 = \beta_1 + u_{1j}$$

$$b_2 = \beta_2 + u_{2j}$$

$$b_3 = \beta_3 + u_{3j}$$

[2/14/2023] On page 277, on the second line from the end of the page, change  $\hat{\beta}_1 = 0.78125$  to  $\hat{\beta}_1 = 0.5$ . Also put a hat on the  $\beta_1$  at the end of the line.

[4/21/2023] On page 323, in the solution to exercise 28.5, on the second line, replace  $x(1-x)^5$  with  $x(1-x)^4$ , so that the line reads

$$(x^2(1-x))(x(1-x)^4) = x^3(1-x)^5$$

[3/13/2023] On page 352, delete the footnote.

[11/3/2022] On page 406, replace the solution to exercise 33.9 with

The first sum of two consecutive  $\rho$ s that is negative is  $0.015 - 0.02$ , so  $t = \boxed{35}$ .

[3/13/2023] On page 413, 3 lines from the bottom of the page, change “ $\lambda_i = \log\_exposures \dots$ ” to “ $\ln \lambda_i = \log\_exposures \dots$ ”

[9/8/2022] On page 470, in exercise 37.10, in the three bullets, the models should be numbered as Model I, Model II, and Model III respectively.

[3/13/2023] On page 478, on the line above the first displayed expression, change “mean square error” to RSS. One line and three lines below the displayed expression, change MSE to RSS.

[3/13/2023] On page 479, delete footnote 1.

[3/13/2023] On page 501, replace the solution to exercise 38.5 with the following:

Splits I and III don't split at all; all observations go into  $R_2$ . Split II puts (4,1) into  $R_2$  and everything else into  $R_1$ . There is no error for (4,1), whereas the error of the other 5 is the square difference from the mean, or the population (division by 5) variance times 5, which is 0.548. Split IV puts (1,0) into  $R_1$  and everything else into  $R_2$ . Once again, we can compute the RSS as the variance in  $R_2$ , or 0.2824, times 5, or 1.412. Split V puts two observations, (3,2) and (2,2), into  $R_2$  and the others into  $R_1$ . The variance of the observations in  $R_1$  is 0.451875 so the sum of squares is  $4(0.451875) = 1.8075$ . The RSS for  $R_2$  is  $(1.5 - 1.75)^2 + (2 - 1.75)^2 = 0.125$ . The total RSS for this split is  $1.8075 + 0.125 = 1.9325$ . Split II minimizes the RSS. **(B)**

[8/28/2024] On page 505, on the ninth line of Section 39.1 beginning “The principal components”, change  $X_i$  to  $X_j$ .

[3/13/2023] On page 506, in the table, change  $x_{62}$  from 1 to  $-1$ .

[8/28/2024] On page 527, in the solution to exercise 39.12, change  $x_{13}$  to  $x_{31}$ .

[8/22/2023] On page 649, in question 13 II, change “Kenward-Rogers” to “Kenward-Roger”.

[11/1/2022] On page 763, in the solution to question 4, on the second to last line, change  $\frac{0.1(\mu_s^2 + \sigma_s^2)}{0.2\mu_s^2}$  to  $\frac{0.1(\mu_X^2 + \sigma_X^2)}{0.2\mu_X^2}$ .

[8/22/2023] On page 797, in the solution to question 13 II, change “Kenward-Rogers” to “Kenward-Roger”.

[11/1/2022] On page 798, in the solution to question 21, change the numbering to I, II, III, and change III to

The WAIC calculation changes when data is aggregated since the aggregated likelihoods are multiplied by binomial coefficients. **X**

Change the answer key to **(E)**.