Errata and Updates for the 1st Edition 2nd Printing of the ACTEX Manual for Exam FAM-S

(Last updated 4/24/2023)

Page 192 **9th line from the bottom.** For the Single parameter Pareto distribution, change the second moment from $E\left[X^2\right] = \frac{2\theta^2}{\alpha-2}$ to $E\left[X^2\right] = \frac{\alpha\theta^2}{\alpha-2}$.

Page 259 **Last line of Problem 45.**

Change "1 weeks" to "13 weeks".

Page 308 **Third line of Solution of Problem 13.**

Change $E[S^{(A)}]$ to $Var[S^{(A)}]$.

Page 337 **Solution of Problem 5.**

Change **Answer C** to **Answer D**.

Page 352 **Tabe in Problem 9.**

Change Year Reported of 1997, settled in 1999 from 11 to 1, namely,

Number of Claims Settled			
Year	Year Settled		
Reported	1997	1998	1999
1997	Unknown	3	1
1998		5	2
1999			4

Page 367 **Problem 7. Before the choices.**

Add the missing question:

Determine the difference between $\widehat{S}_1(1250)$ and $\widehat{S}_2(1250)$.

Page 372 **Solution of Problem 7. Third line.**

Change $y_2 = 1200$ to $y_4 = 1200$.

Page 383 **Tenth line from the top.**

Change the last n_1 to n_3, namely,

The sum over all Category 3 points is $\frac{n_3}{\alpha} + \Sigma\left[\ln\left(d_i + \theta\right) - \ln\left(x_i + \theta\right)\right] = \frac{n_3}{\alpha} - C_3$

Page 388 **Ninth Line from the bottom.**

In (c), change the second line to:

10 insurance payment amounts: 2, 4, 5, 5, 8, 10, 12, 15 and 2 limit payments of 20 each

Page 398 **Solution of Problem 15.**

Change the last four lines to:

$$Y = \ln\left(\frac{21}{20}\right) + \ln\left(\frac{22}{20}\right) + \ln\left(\frac{25}{20}\right) + \ln\left(\frac{26}{20}\right) + 2 \times \ln\left(\frac{29}{20}\right) + \ln\left(\frac{33}{20}\right) + \ln\left(\frac{35}{20}\right)$$
$$+ 2 \times \ln\left(\frac{30}{20}\right) + \ln\left(\frac{28}{25}\right) + \ln\left(\frac{30}{25}\right) + \ln\left(\frac{35}{25}\right) + \ln\left(\frac{42}{25}\right) + 2 \times \ln\left(\frac{30}{25}\right) = 4.7596$$

and $Z = 8 + 4 = 12$ (number of non-censored values).

The mle of $\frac{1}{\alpha}$ is .397, so the mle of α is 2.52.

Page 415 **Problem 21.**

Add the missing choices:

(A) Less than 2.4
(B) At least 2.4, but less than 2.6
(C) At least 2.6, but less than 2.8
(D) At least 2.8, but less than 3.0
(E) At least 3.0

Page 422 **Solutions of Problem 21.**

Change the last seven lines to:

$$\frac{1}{\beta} \times \left(\sum_{i=1}^{n} x_i\right) - \frac{1}{1+\beta} \times \left(\sum_{i=1}^{n} x_i\right) - n \times \frac{2+2\beta}{2\beta+\beta^2} = 0.$$

For the given data, this equation is $\frac{47}{\beta} - \frac{47}{1+\beta} - \frac{16+16\beta}{2\beta+\beta^2} = 0$.

With common denominator $\beta(1+\beta)(2+\beta)$, this equation becomes

$$\frac{47(1+\beta)(2+\beta)}{\beta(1+\beta)(2+\beta)} - \frac{47\beta(2+\beta)}{\beta(1+\beta)(2+\beta)} - \frac{(16+16\beta)(1+\beta)}{\beta(1+\beta)(2+\beta)} = 0.$$

This reduces to the quadratic equation $16\beta^2 - 15\beta - 78 = 0$.

The equation has one negative solution, which is rejected, and the positive solution is 2.73, which is the mle of β.

Page 442 **Problem 11(b). First line.**

Change "readability: to "credibility".

Page 442 **Problem 12. Sixth and eighth lines.**

Change "readability: to "credibility".

Page 447 **Problem 29. Sixth line.**

Change "readability: to "credibility".

Page 477 **Solution of Problem 1. Sixth line.**

Change (i) to (ii).

Page 477 **Solution of Problem 1. Tenth line.**

Change "tow" to "two".

Page 481 **Table 29.2.**

Change "Incremental Loss Payments" to "Cumulative Loss Payments".

Page 523 **Table in Problem 2.**

Change the Ammount Paid on Claim associated with Claim File ID 2 from 900,000 to 1,000,000.

Page 530 **Solution of Example 32.1. First line.**

Change $\max\{100 - S_1\ ,\ 0\}$ to $\max\{90 - S_1\ ,\ 0\}$.

Page 534 **Second graph**

Change the upper-upper node from 66.75 to 66.25.

Page 543 **Last line.**

Change the last formula to

$$100,000 \times 0.0696 = 6,960.$$

Page 563 **Choice D of Problem 3.** Change $\dfrac{1 - .5e^{-r}}{1.5}$ to $\dfrac{2e^{-r} - 1}{1.5}$.

Page 570 Change the **solution of Problem 3** to:

The risk neutral probability of the stock price dropping to $0.5S_0$ is $q = \frac{2-e^{-r}}{1.5}$. The price of the option is the expected present value

$$e^{-r} \times [q \times 1 + (1 - q) \times 0] = \frac{2e^{-r} - 1}{1.5}.$$

Answer D