Errata and Updates for ASM Exam FAM-S (First Edition) Sorted by Page

[2/9/2024] On page x, replace the link on the second line of the Tables section with

`https://www.soa.org/globalassets/assets/files/edu/2023/spring/study-note/2023-tables-fam-s.pdf`

On the line after the link, delete the sentences beginning "It also gives you a chi-square ..." to the end of the paragraph. The tables no longer have a chi-square table.

[12/17/2023] On page 51, on the last line, the end of the line, starting with the boxed 0.77567, is incorrect. The line should read

$$\Pr(X<1547.5)=\Phi\left(\frac{1547.5-1500}{\sqrt{3750}}\right)=\Phi(0.77567)=\boxed{\mathbf{0.78103}}$$

[8/31/2023] on page 94, make the following corrections:

- 3 lines from the end of the first paragraph, change "calender" to "calendar".
- On the first line of Example 7A, put a period and a space after "December 31, 2022".
- On the first line of the solution to Example 7A, change 2019 to one less than the current year. For example, in 2023, replace 2019 by 2022.

[7/21/2023] On page 99, Subsection 7.2.4 is not on the FAM-S syllabus. You may skip it.

[1/3/2024] On page 120, in exercise 8.10, on the first line, put a bracket after #68.

[12/27/2023] On page 129, in the solution to exercise 10.20, on the third line, change "evaluation" to "evaluate".

[12/28/2022] On page 358, in the solution to exercise 22.2, on the fourth and sixth lines, change 26.5 to 26.25.

[11/10/2023] On page 397, Section 24.1 #3 in the enumerated list, delete the sentence "Note the division by n...". While in practice μ is estimated by $\bar{x}$, making the estimator biased, the maximum likelihood estimator itself uses the true mean μ, making the estimator unbiased.

[11/19/2023] On page 443, in the solution to exercise 24.45, delete the first sentence and the parenthesized sentence after it. The situation is more complicated. The maximum likelihood estimator of σ^2 is asymptotically unbiased, but square roots of unbiased estimators are usually biased, so the estimator of σ is biased.

[12/17/2023] On page 460, one line below displayed line (26.1), change $(y_p/k)^2$ to $(y_p/r)^2$.

[12/17/2023] On page 510, in the paragraph before displayed formula (29.1), replace the sentence beginning "So an equivalent portfolio" with

So an equivalent portfolio would consist of buying the stock now and borrowing Ke^{-rT} at an interest rate equal to the risk-free rate for a period of T years. With this portfolio, at time T, you would have the stock and you would pay K, the same as what would happen if you bought a call and sold a put. Therefore, the price of the option portfolio is $S-Ke^{-rT}$.

[12/17/2023] On page 517, in exercise 29.12(iii), replace 80 with 90.

[12/17/2023] On page 524, in the solution to exercise 29.23, on the last line, change $e^{-0.025}$ to $e^{-0.015}$ in two places. Change the final answer to 0.566315. Then the last line will read

$$(uS-K)qe^{-0.015}=\big((1.151131)(40)-45\big)(0.55)\left(e^{-0.015}\right)=\boxed{\mathbf{0.566315}}$$

[12/17/2023] On page 536, in the solution to Quiz 29-1, on the last line, replace the final answer 2.02 with 7.02.

[12/28/2022] On pages 532–533, the solution to exercise 30.2 is not related to the question. Replace it with:

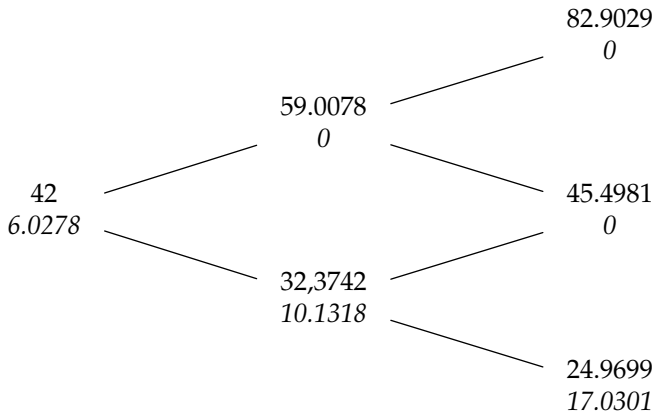
The risk neutral probability of an up move is

$$q = \frac{e^{0.02} - e^{-0.26}}{e^{0.34} - e^{-0.26}} = 0.393045$$

Note that $42ud > 42$, so the option only pays off at the dd node. Then

$$S_{dd} = 42e^{-0.26(2)} = 24.96986$$
$$P_0 = e^{-0.04}(1-q)^2(42 - S_{dd}) = e^{-0.04}(1-0.393045)^2(42-24.96986) = \boxed{\mathbf{6.028}}$$

The full binomial tree, although not needed for the solution, is shown below:



[12/17/2023] On page 547, on the last line of the solution to exercise 31.13, change the final answer from −0.72609 to −0.27391.

[2/1/2024] On page 575, the solution to question 2 ignores the 90% coinsurance mentioned on the first line. So change "90%" on the first line to "100%".

[12/17/2023] On page 602, question 7 is based on off-syllabus material and may be skipped.

[12/17/2023] On page 620, question 5 is based on off-syllabus material and may be skipped.

[2/8/2024] On page 714, the solution to question 16 is obsolete, since the tables now include formulas for the first limited moment of a single-parameter Pareto with $\alpha = 1$. Here is a solution using the tables:

We use the formulas in the tables. For the first moment, use the special formula for $\alpha = k$

$$\mathbf{E}[X \wedge 10{,}000] = \theta\left(1 + \ln(10{,}000/\theta)\right) = 1000(1 + \ln 10) = 3302.585$$
$$\mathbf{E}\left[(X \wedge 10{,}000)^2\right] = \frac{\alpha\theta^2}{\alpha - 2} - \frac{2\theta^\alpha}{(\alpha-2)10{,}000^{\alpha-2}}$$
$$= -1{,}000^2 + \frac{2(1{,}000)}{10{,}000^{-1}} = 19{,}000{,}000$$
$$\text{Var}(X \wedge 10{,}000) = 19{,}000{,}000 - 3302.585^2 = 8{,}092{,}932$$
$$\sqrt{8{,}092{,}932} = \boxed{\mathbf{2844.8}} \qquad \textbf{(E)}$$