# Errata and updates for ASM Exam C/4 Practice Exams sorted by date

[2/6/2012] On page 66, replace the solution to question 18 with

The sample means are 6, 2, 1, 3 for the four policyholders respectively. The expected hypothetical mean is estimated with the overall sample mean, 3. The expected process variance is estimated as 3 as well, due to the Poisson assumption.

The variance of the hypothetical means is estimated by

$$\hat{a} = \frac{(6-3)^2+(2-3)^2+(1-3)^2+(3-3)^2}{3} - \frac{\hat{v}}{n} = \frac{14}{3} - \frac{3}{2} = \frac{19}{6}$$

The credibility factor is

$$\frac{2\hat{a}}{(2\hat{a}+\hat{v})} = \frac{19/3}{19/3+3} = \frac{19}{28}$$

Expected claims for Policyholder A is

$$\frac{19}{28}(6) + \frac{9}{28}(3) = \boxed{\mathbf{5.0357}}$$

[2/5/2012] On page 31, in question 30(ii), change $F(\lambda)=1-2\lambda$ to $F(\lambda)=2\lambda$.

[1/30/2012] On page 27, in question 16, change the five answer choices to 0.015, 0.016, 0.017, 0.018, and 0.019.

[1/30/2012] On page 66, in the solution to question 16, change the last line to

$$h(35) = \frac{0.01(4)(35)}{870} = \boxed{\mathbf{0.01609}} \qquad \textbf{(B)}$$

[1/17/2012] On page 47, the solution to question 33 is incorrect. The correct solution is:

The largest absolute difference occurs at 0, where the difference is 0.4. **(D)**

[1/17/2012] On page 56, in the solution to question 22, in the last line of the table, the second, third, and fourth columns should be 0.75, 1.00, 0.80 respectively.

[12/31/2011] On page 14, in question 12, on the second-to-last line of the question, replace “deductibles” with “policy limits”.

[12/30/2011] On page 20, in question 29, on the last line of the question, insert “the variance of” after “determine”.

[12/29/2011] On page 17, question 20 is defective. Replace it with:

Claim sizes follow an exponential distribution with mean $\theta$. The improper prior density of $\theta$ is

$$\pi(\theta) = \frac{1}{\theta^2} \qquad \theta > 0$$

You observe claim sizes of 10, 20, and 90.

Determine the posterior mode of the distribution.

(A) 16 (B) 20 (C) 24 (D) 30 (E) 40

[12/29/2011] On page 50, in the solution to question 4, on the second line, the third expression should be $e^{(25-3x)\theta}$ instead of $e^{(20-3x)\theta}$. On the second to last line, change 1/311 to 1/348. On the last line, change the final answer from 0.01824 to 0.01724 and the answer choice to A.

[12/29/2011] On page 55, replace the solution to question 20 with

The likelihood times the prior is

$$\frac{e^{-120/\theta}}{\theta^5}$$

which we recognize as the form of an inverse gamma with parameters $\alpha = 4$ and $\theta = 111$. (Not the same as our $\theta$.) The mode is $\theta/(\alpha+1) = 120/5 = \boxed{\mathbf{24}}$. **(C)**

[12/27/2011] On page 45, on the first displayed line in the solution to question 28, change the numerator 80 to 90.

[12/24/2011] On page 39, in the solution to question 9, at the beginning of the 7th line, change “One standard deviation” to “Two standard deviations”.

[12/22/2011] On page 24, in question 4, on the second line, change 2 to II. On the fifth line, change study I to study $i$.

[12/22/2011] On page 24, in question 5, change the answer choices to (A) 0.20, (B) 0.22, (C) 0.24, (D) 0.26, (E) 0.28.

[12/22/2011] On page 25, change the first line of question 11 to the following:

On an insurance coverage with ordinary deductible 500, you observe the following losses:

[12/22/2011] On page 31, in question 31, on the third line, change “200 aggregate deductible” to “100 aggregate deductible”.

[12/22/2011] On page 62, replace the solution to question 5 past the first paragraph with the following:

The hypothetical mean of $I$ is $\Pr(X > 1000) = e^{-(1000/1000)^{0.5}} = 0.367879$ for the first class and $e^{-(1000/500)^2} = 0.018316$ for the second class. The overall mean is $0.5(0.367879 + 0.018316) = 0.193098$ and the variance of the hypothetical means is $a = 0.5^2(0.367879 - 0.018316)^2 = 0.030549$.

The process variance of $I$ is $(0.367879)(1 - 0.367879) = 0.232544$ and $(0.018316)(1 - 0.018316) = 0.017980$ in the two classes, so the expected process variance is $0.5(0.232544 + 0.017980) = 0.125262$.

The credibility factor for 4 observations is $4/(4+k) = 4/(4+0.120262/0.030549) = 0.493802$. 1 of the 4 observations is greater than 1000, so $\bar{x} = 0.25$, and the credibility estimate of the probability is

$$0.493802(0.25) + (1 - 0.493802)(0.193098) = \boxed{\mathbf{0.2212}} \qquad \textbf{(B)}$$

[12/22/2011] On page 63, in the solution to question 10, on the fifth displayed line, add (2) between $0.25^2$ and $(40{,}000)^2$: $0.25^2(2)(40{,}000^2)/12$.

[12/22/2011] On page 67, in the solution to question 19, on the last two lines, change the second minus to plus. The final answer is $-2$. **(D)**

[12/22/2011] On page 70, in the solution to question 29, on the last line, the second exponent should be $2.388122/1.1^4$.