ACTEX EXAM C STUDY MANUAL – FALL 2009

Errata List, by S. Broverman Updated January 24, 2009

Sep 5/09 Page LM-22, in Equation 2.15 the last expression should be $-\frac{d}{dx}\ln S(x)$
(negative sign was missing)

Sep 5/09 Page LM-27, in the line before Equation 2.23 should be $k=\alpha-1$ (not $k=\alpha+1$)

Sep 23/09 Page LM-154, #5, cost per payment is $E[Y_P]=\frac{E[Y_L]}{1-F(2000)}=\frac{112.5}{.075}=1500$

Sep 23/09 Page LM-157, #15, bottom line after the first = sign, the denominator
Should be $[S'(x)]^2$

Aug 16/09 Page ME-18, #7 line 2, alternative hypothesis should be the X is
Uniform on [0,5]

Aug 16/09 Page ME-21, #7 solution, last line .1 should be .9, answer should be E

Sep 28/09 Page ME-53, #1 solution, last 2 lines should be

$\hat{f}(x)=0$ for $x<2$, $\hat{f}(x)=1\times\frac{1}{12}\times\frac{1}{10}=\frac{1}{120}$ for $2\le x<7$,

$\hat{f}(x)=2\times\frac{1}{12}\times\frac{1}{10}=\frac{1}{60}$ for $7<x<10$, …, $\hat{f}(x)=5\times\frac{1}{12}\times\frac{1}{10}=\frac{1}{24}$ for $25<x<28$

Sep 7/09 Page ME-72, #5 solution, last 3 lines should be

$$\left(\frac{90}{200}\right)\frac{(100^3-0^3)}{3(100-0)}+\left(\frac{60}{200}\right)\frac{(300^3-100^3)}{3(300-100)}+\left(\frac{30}{200}\right)\frac{(500^3-300^3)}{3(500-300)}+\left(\frac{20}{200}\right)\frac{(900^3-500^3)}{3(900-500)}=89{,}333$$

The estimated loss variance is $89{,}333-212.5^2=44{,}177.$

The estimated loss standard deviation is $\sqrt{41{,}777}=210.$

Jan 24/10 Page ME-92, #31, there is a missing row in the data table,
there should be a row 6000 0 0 1 1

Jan 24/10 Page ME-92, second #31 should be labeled #32

Jan 24/10 Page ME-100, #32 solution should be

$S_n(y_4) = S_n(y_3)\left(1-\frac{s_4}{r_4}\right)$. Therefore, $.50 = (.65)\left(1-\frac{3}{r_4}\right)$.

It follows that $r_4 = .13$. Since there are 3 deaths at time y_4 and 6 censorings at between y_4 and y_5, the number at risk at time 5 must be $r_5 = 13-3-6 = 4$.

Then, from $S_n(y_5) = S_n(y_4)\left(1-\frac{s_5}{r_5}\right)$ we get $.25 = (.5)\left(1-\frac{s_5}{4}\right)$, it follows that $s_5 = 2$.

Answer: B

Aug 27/09 Page CR-26, #14 solution, second line 1,500,000 should be 1,000,000 and last line should have $n_0\left[1+\frac{Var[Y]}{(E[Y])^2}\right] = 4000\times\left[1+\frac{1,000,000}{(1000)^2}\right] = 8000$

Aug 16/09 Page CR-185, #30 solution is for a different question

May 14/09 Page PE-205, #4, should be “plus 1,25 x the standard deviation ..”

May 14/09 Page PE-243, #4, line 2, “variance” should be “the expected value”

May 14/09 Page PE-260, #26, answer should be E