2B, pages 53, 8 lines from bottom: R(10000) = 96.91% = 1 - 3.09% = **1 - LER(10000)**.

2B, pages 54: Exercise: For a loss of size 6 and a loss of size **15**, list

2D, page 125, middle of the page: the average size is $\frac{E[X \wedge u] - E[X \wedge d]}{S(d)}$

2D, page 131: $\frac{\mathbf{E[X \wedge u] - E[X \wedge d]}}{\mathbf{S(d)}}$ is not equal to e(d).

If u = ∞, in other words there is no maximum covered loss, then this is e(d).

2D, page 143, Q. 18.42: $300,000 excess of **$**200,000

2E, page 172, solution to the exercise: $\int_\theta^x y \frac{\alpha\theta^\alpha}{y^{\alpha+1}} dy + x\left(\frac{\theta}{x}\right)^\alpha = \alpha\theta^\alpha \int_\theta^x \frac{1}{y^\alpha} dy + \theta^\alpha x^{1-\alpha} =$

$$\alpha\theta^\alpha \frac{x^{1-\alpha} - \theta^{1-\alpha}}{1-\alpha} + \theta^\alpha x^{1-\alpha} = \frac{-\alpha}{(\alpha-1)}\frac{\theta^\alpha}{x^{\alpha-1}} + \frac{\alpha\theta}{\alpha-1} + \frac{\theta^\alpha}{x^{\alpha-1}} = \frac{\alpha\theta}{\alpha-1} - \frac{\theta^\alpha}{(\alpha-1)x^{\alpha-1}}$$

2I, page 277, 3rd paragraph: Each loss of size less than or equal to u contributes its own size, while each loss greater than u contributes just **u** to the average.

2K, page 377, line 8: $E[(1.1X)^2] = 1.1^2 E[X^{\mathbf{2}}]$.

2K, 381, last line of the solution to the first exercise: In 200**0**, e(3150) =

2K, 387, last line of the solution to the first exercise: (360,227 / **0**.702)

2N, 519, solution to the exercise: $\int_0^{10} \mathbf{0.01}\, dx$

3G, p. 256, sol. 5.74: Pr[S>9] ≅ 1 - Φ((9.5 - 6)/√14.4) = 1 - Φ(**.92**) = 1 - 0.8212 = **17.88%**.

3G, p. 263, sol. 5.101: Var[B] = (1)($\mathbf{2000}^2$ + $\mathbf{4000}^2$) = 20 million.

4C, p.70, sol. 6.2: ρ(X + c) = (1 + k)E[X +**c**]

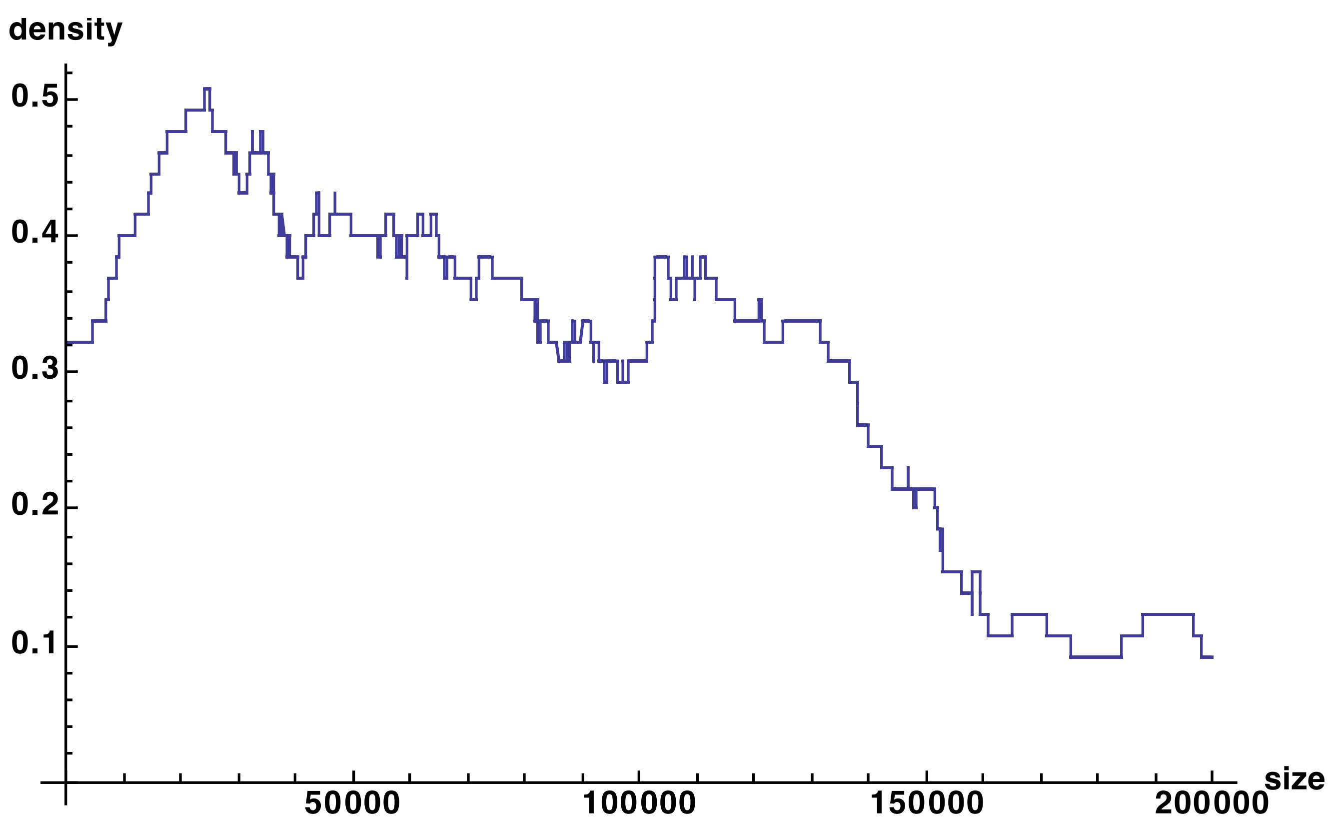
5B, page 55, line 9: (**158** + 160 + **162**)

5C, p. 92, at top: A zero-truncated Negative Binomial has a mean of: **r**β/{1 - 1/(1 + β)^r}.
Therefore for r fixed, $\overline{X}$ = **r**β/{1 - 1/(1 + β)^r}.

5D, p.120, sol. 3.41: Setting the partial derivative of the loglikelihood with respect to λ equal to zero: -5 + 4 $\mathbf{e^{-\lambda}}$ / (1 - $e^{-\lambda}$) = 0. $\Rightarrow$ $e^{-\lambda}$ = 5/9. $\Rightarrow$ λ = **0.588**.

6A, page 19: The formula for the average payment per non-zero payment by the insurer should be multiplied by the coinsurance factor c.

6B, page 55: Here is a corrected version of 100,000 times the uniform kernel smoothed density with an even wider bandwidth of 25,000, and thus even more smoothing:



6B, p. 67: For the triangular kernel, $K_y(x) = 1 - \frac{\{x - (y+b)\}^2}{2b^2}$ for $y \le x \le y + b$.

6L, p. 425, line 3: $\frac{2\,\theta^2}{(\alpha-1)\,(\alpha-2)} - \left(\frac{\theta}{\alpha-1}\right)^2 = \frac{\alpha\,\theta^2}{(\alpha-1)^2\,(\alpha-2)}$

7B, p. 59, Q. 3.20: $c_S^2(39) = 0.012089$, $c_S^2(40) = 0.012250$.

7B, p. 60, Q. 3.22-23: Change the date of death for individual F to 12/1/200**9**.

7B, p.65, Q. 3.36: bad line break, should read ${}_3\hat{q}_2$.

7C, p. 100-101: There are two questions both labeled 5.53.

7E, p. 194, Sol. 2.61: (85/100) (65/85) (45/65) (35/**45**) = 35/100 = 0.350.

7F, p. 203, Sol. 5.59: $\hat{H}_1(7000) = 3/12 + 1/9 + 1/8 + 1/7 + 2/6 + 1/4 + 1/3$.

$\hat{H}_2(7000) = 1/9 + 1/8 + 1/7 + 1/4 + 1/3$. $|\hat{H}_1(7000) - \hat{H}_2(7000)| = 3/12 + 2/6 =$ **0.58**.

8D, p.135, sol. 6.16:

Standard for full credibility for <u>severity</u> is: $CV^2\, n_0 = (4^2)(1180) =$ **18,880** claims.

$Z = \sqrt{\frac{7{,}363}{18{,}880}} = 62.4\%$.

Estimated state severity is: (62.4%)($29,608) + (1 - 62.4%)($53,985) = **$38,774**.

9D, p. 114, first integral should be: $\int_0^1 \pi(q)\, q\, dq = \int_0^1 q\, dq = 1/2$.

9D, p. 116, last line: The **predictive** distribution is denoted by: $f_{Y|X}(y|x)$.

9D, p. 117, line 4: $f_{Y|X}(\mathbf{y}|x) =$

9D, p. 118, footnote 64: the mean frequency would be $r\beta$.

9M, p. 477, solution 6.50: $\int E[X \mid \theta]\, \mathbf{f(\theta \mid x_1, x_2)}\, d\theta = \int_{600}^{\infty} (\theta / 2)\, (3)(600^3) / \theta^4\, d\theta$

10B, p. 46, 6th line from the bottom: mean of **predictive** distribution

12B, p. 55: First compnay should be Arriba Taxis, third company should be Canarsie Cabs.

13C, p.114: There are two questions numbered 11.13.
The solution to the first of these is labeled 11.14.
The solution to what I have as Q.11.15 is shown as 11.16, etc.

13D, p.121, last two column headings in the table should be: $S_i/\sqrt{i}$, $(S_i/Xbar_i)/\sqrt{i}$

13D, p.125, last column heading in the table should be: $n\ F_n / S_n$

13D, p.131, Q.12.3, last column heading in the table should be: S_i^2

13D, Q.12.12 and 12.13, last column heading in the table should be: $n\ F_n / S_n$

13D, p. 138, Q.12.23, last two column headings in the table should be: S_n($1 billion), $n\ S_n / F_n$

13D, p.139, Q.12.26, last column heading in the table should be: S_i^2

13D, p.140, Q.12.29, last 3 column headings in the table should be: S_i^2, S_i, $S_i/\sqrt{i}$

13E, Q. 16.13, Q. 16.20, & Q.17.16: should be cubed rather than squared, $\dfrac{\sum_{i=1}^{3}(X_i - \overline{X})^3}{3}$.

13G, p. 258, sol. 5.20: Φ[-0.5**6**] = .2877. Thus the first simulated Standard Normal is -0.5**6**.

13H, p. 295, sol. 11.18: Set $u = 1 - \{500/(500 + x)\}^2$. $\Rightarrow x = 500\{(1-u)^{-0.5} - 1\}$.

13I, p. 298, sol. 12.6: Want $n \geq (y/k)^2(S_n/\overline{X}_n)^{\mathbf{2}}$.

13I, p. 329, sol. 17.12, head of last column of the spreadsheet: (**e(20)** - 33.33)^2

14A, p.10, solution 7: $CV = \sqrt{\dfrac{\lambda\alpha(\alpha+1)\theta^2}{(\lambda\alpha\theta)^{\mathbf{2}}}} = \sqrt{\dfrac{(\alpha+1)}{\lambda\alpha}}$.

14E, p.8, comment to solution 4:
The variance of the aggregate loss is: $(0.8)(5^{\mathbf{2}}) + (9^2)(0.48) = 58.88$.
Thus the Normal Approximation for the probability that the aggregate exceeds 14 is:
$1 - \Phi[(14 - 7.2)/7.67] = 1 - \Phi[0.89] = 18.67\%$.

14G, p.12, solution 11: Var[S] = λ **E[X^2]** = (2000)(20 million) = 40,000 million.

14I, p.8, sol. 1: the headings of the 4th and 5th columns in the spreadsheet should be E_k and V_k.

14I, p.15, sol. 15: $P_1 = P_0 + d_0 - u_0 - x_0 = 0 + 40 - 0 - 6 =$ **34**.

14K, page 2, Q.4: the last interval should be $x \geq 5$

14K, p.9, sol. 3: Variance of this inverse Gamma is: $\lambda^2/12 - (\lambda/4)^2 = \lambda^2/$**48**.

$\text{Var}[\hat{\lambda}] = \text{Var}[1/\bar{X}] = \text{Var}[5/\Sigma x_i] = (5^2)$ (variance of this Inverse Gamma) = $25\lambda^2/48$.

The coefficient of variation of this estimator is: $\sqrt{\frac{25\lambda^2}{48}} / (\lambda/4) = (5/\sqrt{48})\,(4) =$ **2.89**.

14K, p.11, sol. 5: $\hat{S}(5) = \prod_{i=1}^{5} \frac{r_i - s_i}{r_i}$ = (0.8243)(0.8475)(0.8600)(0.8049)(0.7188) = 0.3476.

14L, p.11, sol. 6, line 2: CV = standard deviation / mean = **2**.

14M, page 23, sol. 27:

N	Probability	Mean of S Given N	Square of Mean of S Given N	Second Moment of of S Given N	Var of S Given N
0	10%	0	0	0	0
1	30%	5	25	60	35
2	30%	8	64	130	66
3	20%	12	144	235	91
4	10%	14	196	330	134
Mean		**7.7**	**75.1**		61.90

$VAR_N(E_S[S \mid N]) = 75.1 - 7.7^2 = 15.81$.

Thus the variance of the aggregate losses is:
$E_N[VAR_A(A \mid N)] + VAR_N(E_A[A \mid N]) = 61.90 + 15.81 =$ **77.71**.