p.7, in the grid: 2014 Q15 is in my Section 17.

Pages 137-138: $\frac{(2\%)(94,176) + (8\%)(78,663) + (6\%)(83,527) + (14\%)(65,705)}{322,072}$ = **6.951%.**

The average future annual (exposure based) frequency overall is 7.5%.

Thus, 1 - Z = 6.951. ⇒ Z = 7.3%. ⇒ A 7.3% discount from average.

We wish to charge Territory 1 $500 on average.
Thus we wish to charge those who are claims-free: (0.927)($500) = $463.5.
Let the base rate be x.
There are claims-free 94,176 + 78,663 = 172,839, and not claims free: 5824 + 21,337 = 27,161.
27,161 x + (172,839)($463.5) = (200,000)($500). ⇒ x = $732.27.

We wish to charge Territory 2 $1000 on average.
Thus we wish to charge those who are claims-free: (0.927)($1000) = $927.
Let the base rate be y.
There are claims-free 83,527 + 65,705 = 149,232, and not claims free:
16,473 + 34,295 = 50,768.
50,768 y + (149,232)($927) = (200,000)($1000). ⇒ y = $1214.58.

For those claims-free in Territory 1, the expected pure premium is:
($10,000) {(2%)(94,176) + (8%)(78,663)} / 172,839 = $473.07.
For those not claims-free in Territory 1, the expected pure premium is:
($10,000) {(2%)(5824) + (8%)(21,337)} / 27,161 = $671.34.

For those claims-free in Territory 2, the expected pure premium is:
($10,000) {(6%)(83,527) + (14%)(65,705)} / 149,232 = $952.23.
For those not claims-free in Territory 2, the expected pure premium is:
($10,000) {(6%)(16,473) + (14%)(34,295)} / 50,768 = $1140.42.

Let us compare the amount charged to the expected pure premiums:

Territory	Claims-free	Expected Pure Premium	Premium Charged
1	Yes	$473.07	$463.50
1	No	$671.34	$732.27
1	All	$500	$500
2	Yes	$952.23	$927.00
2	No	$1140.42	$1214.58
2	All	$1000	$1000

P. 734, third line: **quota** share treaty

P. 752, second paragraph: In the first case, the insurer expects to be reimbursed by the insure**d** for losses inside the deductible, while in the second case, the insurer expects to be reimbursed by the insure**d** for losses plus ALAE inside the deductible.

P. 836, Q. 7.63, add: The given loss trends are appropriate for the given excess layer of loss.

P. 865, Q. 7.138, add: The given loss trends are appropriate for the given excess layer of loss.

Page 918, Q. 7.225:

$1,500	Per claim excess of **loss** retention for reinsurance that **applies** to claims occurring in 2016.

Page 923, sol. 7.8: The trend factors should be 1.03 to various powers.
The On Level Trended Premiums are correct.

CY	Earned Premium	On Level Factor	Trend	On Level Trended Premium
2013	20,640,000	0.912	**1.03^4**	$21,186,218
2014	21,709,000	0.925	**1.03^3**	$21,942,860
2015	22,854,000	0.967	**1.03^2**	$23,445,697

page 1008, solution 7.211:
The gross expected loss for each size category is: (60%)(1 million) = 600,000.
However, net of the surplus share treaty, the expected losses for the 1 million properties are only: (50%)(600,000) = 300,000.
Thus the expected loss in the layer of the excess treaty is:
(600,000) (0.027778 + 0.340278 + 2/3) + (300,000) (2/3) = **820,834**.

Page 1245, sol. 9.66c: Prob[Maximum Occurrence > 20 million] = **1 - (94%)(96%)** = **9.76%**.

page 1570, sol. to Exercise: a Negative Binomial Distribution with r = **3**

Page 1731: **x-d** **x** > d

Page 1733: $E[X \wedge 500]$ = (0.6)($100) + (**0.3**)($500) + (0.1)($500) = $260.

Page 1767, Q.14.18: the 18 should be one column to the right.

Page 1777, Q. 14.50: **12**, p. 579, Sol. 20.11: E[X * **2000**] =

Page 1816, Q. 14.186: In the fourth row, the losses should be **16 million**.

Page 1866, solution 14.43: E[X $\wedge$ **2000**] =

Page 1868, sol. 14.50: The mean in 2018 is: (1.1)(3009) = **3309.9**.
The distribution function at 1000 in 2018 is the distribution function in 2015 at 1000/1.1: 46.4%.
Assuming the fixed ALAE also increases by 10%, then in 2018 the cost for the 1000 straight deductible is: {3309.9 - 686.4 + (100)(1.1)(1 - 46.4%)} (1.08) = 2897.06.
In 2018, the cost with no deductible is: {3309.9 + (100)(1.1)} (1.08) = 3693.49.
Thus the credit for the 1000 straight deductible in 2018 is: 1 - 2897.06/3693.49 = **21.6%**.
Alternately, the factors of 1.1 and 1.08 in the numerator and denominator will cancel.
Thus, the deductible credit is:

$$\frac{\text{losses eliminated}}{\text{total losses}} = \frac{E[X\ ;\ 1000/1.1] + 100\ F(1000/1.1)}{E[X] + 100} = \frac{624 + (100)(0.464)}{3009 + 100} = \mathbf{21.6\%}.$$

Page 2282, Q. 18.14: Calculate $\phi(1)$ and $\phi(2)$.

page 2606, rewrite Q.23.1:.

- Expected limited losses capped at $600,000 per accident limit = **$580,000**

page 2649, revised solution to 23.13:
(b) The entry ratio is computed off of the expected losses capped at $600,000 per accident limit.
r = 1,000,000/580,000 = 1.72.
Using the column for a $600,000 deductible, interpolating we get an insurance charge of 0.125.
The expected losses paid by the insurer without the aggregate limit would be:
$700,000 - $580,000 = $120,000.
With the aggregate limit, the expected losses paid by the insurer are:
(Insurance charge) (Expected Primary Losses) + Expected Excess Losses =
(0.125)($580,000) + $120,000 = **$192,500**.
Comment: Similar to Problem 3.13 in “Individual Risk Rating”.
Even though the insurance charge is larger in part (b), the total expected amount paid by the insurer is larger in part (a). With the larger deductible in part (b), the insured retains more losses, and thus the insurer pays less than in part (a).