23. (2 points)

Given the following information:

Unadjusted Case Outstanding Claims ($000s)

Accident Year	12 Months	24 Months	36 Months
2010	$10,300	$21,300	$37,500
2011	$11,400	$29,400	
2012	$15,600		

Open Claim Counts

Accident Year	12 Months	24 Months	36 Months
2010	1,030	1,420	1,500
2011	1,140	1,470	
2012	1,200		

Unadjusted Cumulative Paid Claims ($000s)

Accident Year	12 Months	24 Months	36 Months
2010	$2,575	$15,975	$30,000
2011	$2,850	$18,200	
2012	$3,900		

Selected annual severity trend = +5%

a. (1.5 points)

Calculate the adjusted cumulative reported claim triangle using the Berquist-Sherman case outstanding adjustment technique.

b. (0.5 point)

Discuss whether IBNR estimated using the Berquist-Sherman case outstanding adjustment technique should be higher or lower than IBNR estimated using an unadjusted reported claim development technique.

CONTINUED ON NEXT PAGE

Exam 5 Question #23

a. Avg case = Case/Open 13/1.05=12.38

Adj Avg Case ($000)

	12	24	36
2010	11.791	19.048	25
2011	12.381	20	
2012	12		

($000) $Adj\ Rept = (Adj\ Avg\ Case \times Open) + Paid$

	12	24	36
2010	14,720.12	43,022.62	67,500
2011	16,964.29	47,600	
2012	19,500		

b. Original Avg Case

12	24	36
10	15	25
10	20	
13		

Adj Avg Case amounts are higher than original avg case amounts so adjusted case will ↑resulting in ↑reported amounts in earlier years, and lower LDFS, thus less IBNR. Unadjusted would overstate so adjusted will be lower than unadj.

OR

Whether the B/S case OS method produces higher or lower IBNR depends on how the trend in case reserves relates to the selected severity trends. If the case trend is higher, the adjusted amount will be higher in the B/S than development method. This will lead to lower CDFs, and lower IBNR amounts. Vice Versa if the trend in case OS is lower than the select severity trend.

a. Most candidates performed well , either applying the formula from the Friedland text or another reasonable estimation technique of expected loss emergence.

b. Most candidates performed well , either applying the formula from the Friedland text or another reasonable estimation technique of expected loss emergence.

c. Many candidates skipped this part. Some candidates focused on explaining the relatively minor difference in emerging reported losses while overlooking the more drastic difference in paid loss emergence. Other candidates described a scenario that would only partially explain the results derived in part a. and part b. Other candidates described scenarios that would result in the *opposite* results from those seen in part a. and part b., reversing the actual and expected losses. These responses generally received partial credit.

d. Many candidates skipped part d. No credit was given for simply stating a reserve technique, as the question required the candidate to justify the technique. Some responses failed to link the response back to the scenario described in part c. as the question required.

22.

a. Many candidates did not include a detailed discussion of how the changes in retention and / or risk profile would affect the data. Some candidates did not recognize that the actuary was working for a self insured client and not an insurance company; in these cases, some candidates said premium should be adjusted to current rate level, but the actuary would not have premium to use as an exposure base for the self-insured layer.

b. Again, some candidates said premium should be adjusted to current rate level; however the actuary in the question would not have access to premium information for the self-insured layer.

c. Some candidates discussed the need to review the data for changes in frequency and severity, but failed to identify diagnostics that could be used to test for changes.

23.

a. A majority of the candidates received full credit on this part. When there were errors, the most common was calculation errors in the Acc Year 2010 at 24 months despite correct answers elsewhere in the final triangle.

b. Many candidate provided answers that were factually correct but did not fully explain the issue at hand and/or the mechanics of the adjustment.

24.

a. Most candidates received full credit. In limited cases, there were mathematical errors or no final calculation of the ultimate paid S&S.