24. (2.5 points)

Given the following information:

Paid Claims Gross of Salvage & Subrogation

Accident Year	12 Months	24 Months	36 Months	48 Months
2009	$2,000	$2,400	$2,500	$2,500
2010	$2,100	$2,300	$2,400	
2011	$2,100	$2,400		
2012	$2,500			

Paid Salvage & Subrogation

Accident Year	12 Months	24 Months	36 Months	48 Months
2009	$98	$166	$250	$250
2010	$105	$163	$240	
2011	$107	$170		
2012	$75			

- Assume no development after age 48.
- Ultimate claims for accident year 2012 = $2,985.

a. (0.75 point)

Using a development approach, estimate the ultimate salvage and subrogation for accident year 2012.

b. (1.5 points)

Using a ratio approach, estimate the ultimate salvage and subrogation for accident year 2012.

c. (0.25 points)

Briefly discuss which approach, the development or ratio approach, to select in recommending an ultimate salvage and subrogation estimate for accident year 2012.

Exam 5 Question #24

a) Paid S&S ATA

Select all year weighted avg.

12-24	24-36	36-48	48-ULT
1.6097	1.4894	1.000	1.000

e.g. $1.6097 = (166 + 163 + 170) / (98 + 105 + 107)$

2012 ult S&S = $(75) (1.6097) (1.4894) = 179.81$

b) Ratio SS/Paid

	12	24	36	48	ULT ratio
09	0.049	0.069	0.1	0.1	0.1
10	0.05	0.071	0.1		0.1
11	0.051	0.071			0.071(1.429) = 0.10
12	0.03				0.03(1.4701)(1.429)= 0.06

→ select 0.1

Select all yr weighted avg of ratios:

12-24	24-36	36-48
1.407	1.429	1

AY2012 S&S ult= $(2985)(0.1)=298.5$

c. Ratio approach provides more stability, less subject to leveraging at early maturities

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.

b. Most candidates received high partial credit. Very few candidates selected an ultimate ratio for accident year 2012 that considered ultimate ratios from prior years.

c. Many candidates received full credit. Some of the common mistakes were not selecting a method by saying it does not matter and therefore not having a reason, or not giving a valid reason.

25.

a. Candidates generally did not score well on this part.

Many candidates received partial credit for:

- using the average of paid and incurred losses in the denominator of the ULAE ratio
- selecting a ULAE ratio that was appropriate given the ratios calculated by year
- calculating the ULAE provision

Most candidates failed to properly calculate incurred losses as the sum of paid losses, the change in case reserves, and the change in IBNR. Errors made in the incurred loss calculation included simply adding paid losses to the year-end reserve values or not including IBNR. Some candidates did not properly use the average of paid and incurred losses in the denominator of the ratio. Additionally, many candidates calculated a ULAE ratio based on the sum of all years (a weighted average) instead of calculating the ratio by year to identify potential trends. Some candidates determined a ULAE ratio but did not calculate the ULAE provision. Finally, of candidates that did calculate the ULAE provision, almost all candidates failed to properly calculate the ULAE provision. The most common errors in this final step of the calculation included applying the ratio to the sum of year-end case reserves and IBNR for all years, or applying the ratio to 50% of case reserves and 100% of IBNR, despite the question clearly identifying the policy as being claims-made.

b. Most candidates received either no credit or partial credit on this part. Many candidates failed to describe the purpose of the Kittel adjustment, and simply mentioned that the adjustment used the average of paid and reported losses in the denominator of the ratio. Candidates receiving partial credit failed to mention that the adjustment is intended to improve upon the classical method in the case of growing lines of business.

c. The majority of candidates who attempted this part provided an acceptable response.

26.

a. There were many potential causes to the discrepancy in the data – the most common responses were case reserve strengthening, claim payment slowdown, and the presence of an unpaid large loss. Credit was given to any explanation that made sense given the data.

In addition to stating a reason for the discrepancy between paid and reported methods, candidates received credit for explaining how the ultimates for some of the methods were