21. (2.5 points)

Given the following data as of December 31, 2014:

Accident Year	Cumulative Closed Claim Counts 12 months	24 months	36 months
2012	730	800	820
2013	750	825	
2014	775		

Accident Year	Cumulative Paid Claims ($000) 12 months	24 months	36 months
2012	2,250	2,600	2,700
2013	2,600	3,000	
2014	2,000		

Accident Year	Ultimate Claim Counts
2012	820
2013	846
2014	874

- The latest diagonal is representative of current claim adjusting practices.
- There is no development beyond 36 months.
- Annual severity trend is 4%.

a. (2 points)

Using the disposal rate frequency-severity technique, calculate the ultimate claims.

b. (0.5 point)

Assume accident year 2013 experienced a one-time increase in the severity of claim payments with no impact on frequency or disposal rates. Briefly discuss two adjustments to the disposal rate frequency-severity technique that would be appropriate in this scenario.

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EXAM 5 SPRING 2015 SAMPLE ANSWERS AND EXAMINER'S REPORT

QUESTION: 21

TOTAL POINT VALUE: 2.5

LEARNING OBJECTIVE(S): B4 / B5

SAMPLE/ACCEPTED ANSWERS:

Part a: 2 points

Disposal Rates (cum clsd /ult)

Acc Year	12 months	24 months	36 months
2012	0.890	0.976	1.000
2013	0.887	0.975	
2014	0.887		
Sel	0.887	0.975	1.000

Sel. latest diagonal per note in problem.

Avg. Severity (untrd.) (Pd/clsd ct)

Acc Year	12 months	24 months	36 months
2012	3082	5000	5000
2013	3467	5333	
2014	2581		
Sel	2581	5333	5000

Sel. latest diagonal per note in problem.

AY	Ult Clms
2012	2,700,000 (development complete)
2013	[846 (1- 0.975)]*5000*1.04 + 3000000 = 3,109,200
2014	[874(.975-.887)]*5333*1.04 + [874(1-.975)]*5000*1.04^2 + 2000000 = 2,546,069

EXAM 5 SPRING 2015 SAMPLE ANSWERS AND EXAMINER'S REPORT

Part b: 0.5 point

Sample 1:

Adjust the 24 months expected severity for 2013 to reflect higher severity levels.
Exclude 2013 data from the calculation of average severity to be used for other AYs

Sample 2:

If we assume it was a law change in 2013 that continues for 2014, then the severity for 2012 can be adjusted to reflect the change. This should be done by adjusting the incremental severity triangle.

EXAMINER'S REPORT:

General Commentary

Candidate performance was mixed on this question, with many candidates not providing a sufficient answer for full credit on part b., but performing well on part a.

Part a

The candidate was expected to know how to use the Disposal Rate Frequency Severity technique. Most candidates were able to calculate disposal rates and project incremental claim counts correctly.

The most common mistakes included using cumulative average severity instead of incremental average severity and incorrectly applying the trend.

Part b

The candidate was expected to be able to provide at least one fix to the methodology. Overall candidates scored poorly on this part, as they did not discuss how the adjustment should be made or to which year(s) the adjustment should be applied, but simply stated "adjust the data".