15. (1.5 points)

Given the following information:

Accident	Personal Auto: Cumulative Reported Claims ($000) as of (months)		
Year	12	24	36
2013	10,000	12,500	13,750
2014	10,500	13,120	
2015	11,000		

Accident	Commercial Auto: Cumulative Reported Claims ($000) as of (months)		
Year	12	24	36
2013	2,000	4,000	5,000
2014	4,000	8,000	
2015	5,000		

- The insurer began operating January 1, 2013.

a. (0.5 point)

Calculate personal auto reported claims for each of the calendar years 2013, 2014, and 2015.

b. (0.25 point)

Briefly discuss the appropriateness of using calendar year aggregation in estimating unpaid claims.

c. (0.25 point)

Briefly discuss the appropriateness of using accident year aggregation in estimating unpaid claims.

d. (0.5 point)

Evaluate the appropriateness of combining the two lines of business above when estimating unpaid claims for this insurer.

CONTINUED ON NEXT PAGE

QUESTION 15	
TOTAL POINT VALUE: 1.5	**LEARNING OBJECTIVE(S): B1**
SAMPLE ANSWERS	
Part a: 0.5 point	
Calendar Year 2013: 10,000 Calendar Year 2014: 13,000 (10,500+(12,500-10,000)) Calendar Year 2015: 14,870 (11,000+(13,120-10,500)+(13,750-12,500))	
Part b: 0.25 point	
• Due to its fixed nature, calendar year aggregation does not facilitate estimation of unpaid claims. Few techniques exist that employ calendar year aggregation. • Inappropriate – Because the claim losses at the end of the calendar year is fixed and there is no development. There is no estimation on IBNR. • CY aggregation is not appropriate because losses are fixed at the end of the year, so it can be difficult to account for future development. • It's not appropriate. Since CY claim data will not develop.	
Part c: 0.25 point	
• Accident year aggregation is commonly used, and many acceptable techniques exist for the actuary to use in unpaid claim estimation. Therefore, the use of accident year aggregation appears appropriate. • Appropriate since it is common in the industry with benchmarks. • Accident year is more appropriate since claims still develop after year end and provides a better match of premium to losses than calendar year. • AY provides a better match to premium than CY as it allows development beyond a single year. Also, using AY can allow the actuary to isolate AY's with large claims and then proper adjustments can be made. Appropriate for auto.	
Part d: 0.5 point	
• PA age to age 12-24 1.25; 24-36 1.1 CA age to age 12-24 2 ; 24-36 1.25 Not appropriate. CA has much different development pattern, and CA is growing much faster than PA • Development pattern for commercial auto is longer and it is growing at a faster rate than personal auto. This will distort development patterns and create inaccurate results. The lines should not be combined. • It may appear reasonable because both lines are auto coverages and a lack of credibility might suggest a combination is appropriate. • PA LDF 12-24 1.25; 24-36 1.1 CA LDF 12-24 2 ; 24-36 1.25 There is enough data in both lines of business to be credible, so I wouldn't combine them together since their development patterns are not very similar. • I would not combine the two lines. Although the commercial auto could benefit from having more data, the development patterns are clearly different and could cause distortions, especially if the mix of business continues to change.	

EXAM 5 SPRING 2016 SAMPLE ANSWERS AND EXAMINER'S REPORT

EXAMINER'S REPORT

Candidates were expected to calculate calendar year losses from a loss triangle. Candidates were also expected to understand the differences between calendar year and accident year organization of data, as well as homogeneity and credibility of data for estimating unpaid claims.

This question was straightforward, and candidates performed well.

Part a

Candidates were expected to calculate three years of calendar year losses from a loss triangle

Common mistakes included:

- Calculating accident year ultimate losses
- Calculating calendar year losses as if the triangles were incremental

Part b

Candidates were expected understand appropriate and inappropriate usage of calendar year data.

Common mistakes included:

- Defining calendar year data without addressing the appropriateness of using it to estimate unpaid claims

Part c

Candidates were expected understand appropriate and inappropriate usage of accident year data.

Common mistakes included:

- Defining accident year data without addressing the appropriateness of using it to estimate unpaid claims

Part d

Candidates were expected to know when it is appropriate or not appropriate to combine two lines of insurance when estimating unpaid claims. Candidates were expected to observe that the development patterns and growth rates between the two lines were different, or note that credibility could be an issue.

Common mistakes included:

- Calculating the development factors without making any observation about the difference in the patterns
- Recognizing that the development factors were different, but not addressing how this would impact the lines if they were combined to estimate unpaid claims