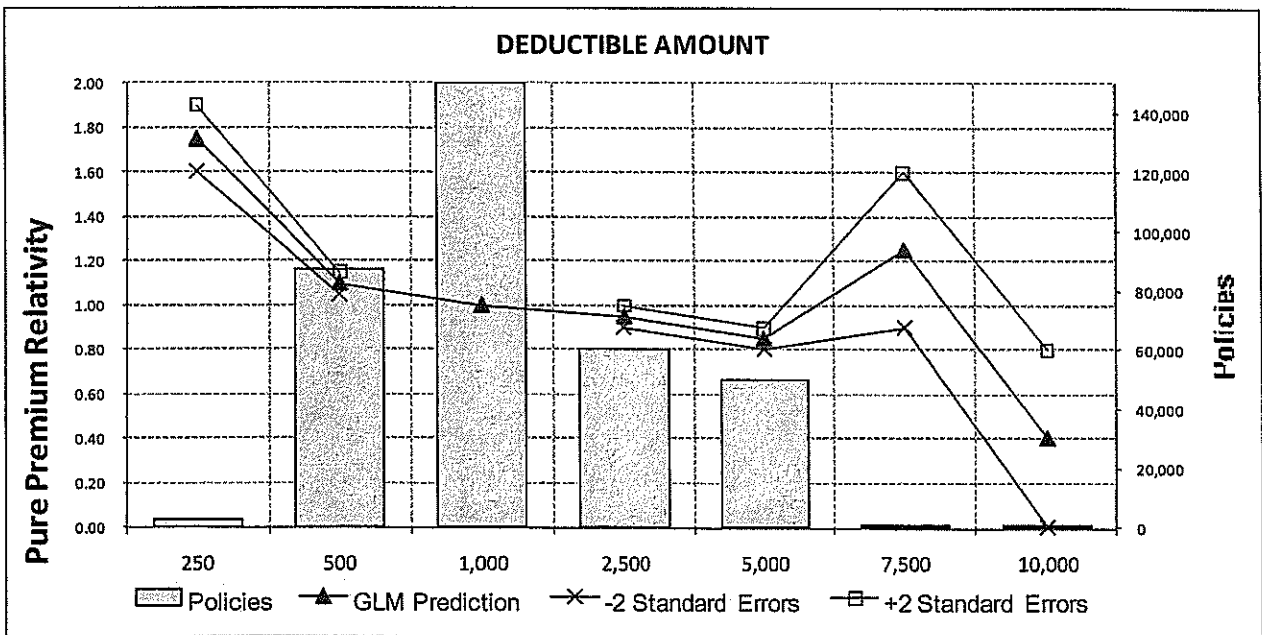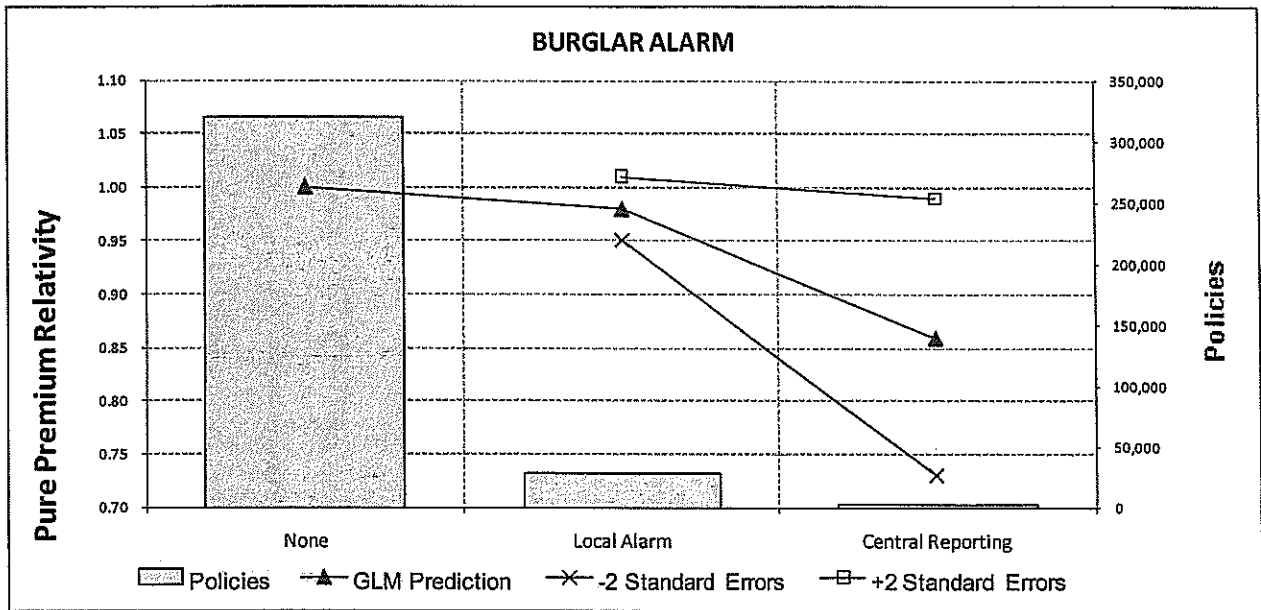12. (3 points)

An insurer is planning to revise burglar alarm and deductible rating plan factors for its Homeowners program. Given the following generalized linear model output:

BURGLAR ALARM

DEDUCTIBLE AMOUNT

<QUESTION 12 CONTINUED ON THE NEXT PAGE>

12. (continued)

Burglar Alarm	GLM Prediction	-2 Standard Errors	+2 Standard Errors	Policies
None	1.00			320,000
Local Alarm	0.98	0.950	1.010	27,500
Central Reporting	0.86	0.730	0.990	2,500

Deductible	GLM Prediction	-2 Standard Errors	+2 Standard Errors	Policies
$250	1.75	1.60	1.90	2,700
$500	1.10	1.05	1.15	87,000
$1,000	1.00			150,000
$2,500	0.95	0.90	1.00	60,000
$5,000	0.85	0.80	0.90	50,100
$7,500	1.25	0.90	1.60	150
$10,000	0.40	0.00	0.80	50

Propose revised burglar alarm and deductible rating plan factors. Document the relevant analysis and rationale to support the proposal.

Exam 5 Question #12

Burglar Alarm- Relatively low volume and wide confidence interval for both Local Alarm and Central Reporting groups. The Local Alarm std errors suggest its not significantly different than the None category (the confidence interval encompass the relativity for none). Central reporting has very for few exposures and large standard errors. I would recommend this variable not be used (1.00 factor for all groups.

Deductible :

250	500	2500	5000	7500	10000
1.50	1.000	0.95	0.85	0.75	0.65

1. 250 not enough data

2. 500, 1000, 2500, and 2000: fit very well and sufficient data factor directionally also make sense. Use indicated factors.

3. 7500: reversal should be lower than 5,000

10,000: indicated factors are too small, may be due to sparse data judgmentally select 0.65.

7500: Select the average factors of 5,000 and 10,000

points were not awarded. Many candidates who chose credit score lost points for saying the levels were "fully credible", as opposed to "good credibility" which leads to a different discussion and also lead to candidates losing points in Part C.

c. To receive full credit, candidates needed to correctly calculate the full credibility standard, calculate the credibility using the square root rule, calculate the company indicated relativities, credibility weight the company relativities with the competitor relativities, and finally re-base the credibility weighted relativities. The most common mistake here was claiming full credibility, not recognizing that the 400 full credibility standard refers to claim count and not exposure. For candidates who calculated the indicated company relativities relative to the total pure premium, a common mistake was not calculating the revenue neutral competitor relativities as well. Additionally, some candidates missed the instruction to use the competitor's relativities as the complement of credibility.

12. In general, the response to this question was poor. Many candidates recognized the small data volume but incorrectly went about combining alarm types or deductibles into one category. This was often accompanied by a calculation of a proposed factor by weighted the GLM output. Time was unnecessarily lost by this calculation. Another common error was candidate's often recognized unintuitive output that seemed to be the result of sparse data but yet still proposed to select the predicted factor.

13.   Many candidates received full credit on this question. Some common mistakes that were made on this problem:

- Forgetting fixed expense is in the numerator.
- Treating the loss elimination ratio as the excess loss ratio. If the candidate used the incorrect LER "correctly" (applied the deductible processing and credit risk loads to the losses under the deductible, the excess risk margin to the losses above the deductible, and used the losses above the deductible in the numerator) candidates still received some partial credit.
- Applying the ALAE % to excess losses.

14.

a. Candidates not receiving partial credit on often restated the same item twice or two sides of the same item. To receive full credit, 2 separate ideas were necessary.

b. On part b, very few candidates only received partial credit. Examples of full credit statements include:

- "An insurer's retention may decline if a rate cap is not adopted."
- "State laws may require a maximum rate change be followed for all policies."

15. This question was answered poorly with few candidates receiving full credit.