13. (1.75 points)

Given the following information:

Policy Limit	Claims	% of Claims at Policy Limit
$50,000	145	100%
$100,000	550	60%
$200,000	875	40%

- All claim payments are either 50% of the policy limit or 100% of the policy limit.
- $50,000 is the basic limit.

Calculate the indicated increased limit factor for the $200,000 limit.

CONTINUED ON NEXT PAGE

QUESTION 13

TOTAL POINT VALUE: 1.75 | **LEARNING OBJECTIVE(S): A8**

SAMPLE ANSWERS

Sample 1

$$\text{LAS (\$50k)} = \frac{145*50{,}000 + 550*50{,}000 + 875*50{,}000}{145 + 550 + 875} = 50{,}000$$

$$\text{LAS (\$50xs50)} = \frac{100{,}000*550*60\% + 100{,}000*550*40\%*50\% - 550*50{,}000 + 50{,}000*875}{550 + 875} = 42{,}281$$

$$\text{LAS (\$100xs100)} = \frac{200{,}000*875*40\% + 200{,}000*875*60\%*50\% - 100{,}000*875}{875} = 40{,}000$$

$$\text{ILF(\$200k)} = \frac{40{,}000 + 42{,}281 + 50{,}000}{50{,}000} = 2.646$$

Sample 2

LAS(50k xs 0) = 50,000

$$\text{LAS(50k xs 50k)} = \frac{330(50{,}000) + 875(50{,}000)}{330 + 875} \quad \frac{(330 + 875)}{(550 + 875)}$$

$$= 42{,}280.7$$

$$\text{LAS(100k vs 100k)} = \frac{350(100{,}000)}{350} \quad \frac{(350)}{(875)}$$

$$= 40{,}000$$

$$\text{ILF for 200k Limit} = \frac{50{,}000 + 42{,}280.7 + 40{,}000}{50{,}000}$$

$$= 2.65$$

EXAMINER'S REPORT

Candidates were expected to use the censored data and as much data as available at each limit, to calculate limited average severities and ultimately the increased limit factor. Correct splitting of the claim sizes were required for the claims from each set of policies. Candidates needed to calculate three LAS amounts using data from all policy limits equal to or above that amount, and combine using the probability that losses are above the limit.

Common mistakes included:

- Not using data from multiple policy limits for each LAS (where appropriate)
- Calculating LAS(150k xs 50k)
- Using censored data for policy limits below the LAS layer
- Double-counting the probability terms