6. (1.5 points)

Given the following information:

Class	Exposures	Current Rate	True Expected Cost	Proposed Rate
A	3,500	$500	$550	$540
B	8,000	$400	$350	$370

- Scenario 1: If the proposed rates are implemented, the projected number of class A exposures will decrease to 3,150; the projected number of class B exposures will remain unchanged.
- Scenario 2: If the proposed rates are not implemented, the projected number of class A exposures will increase to 4,500; the projected number of class B exposures will decrease to 7,000.
- No other expenses are changed in either scenario.
- Profit provision is 0% in the indicated rate.

a. (1 point)

Calculate the profit in each of the two scenarios.

b. (0.5 point)

Explain whether the proposed rates should be implemented given a $10,000 implementation cost.

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QUESTION 6

TOTAL POINT VALUE: 1.5 | **LEARNING OBJECTIVE(S): A6**

SAMPLE ANSWERS

Part a: 1 point

Sample 1

Scenario 1

(1) Class	(2) Exposures	(3) Prop. Rate	(4) Exp. Cost	(5)=(2)x[(3)-(4)] Profit
A	3,150	540	550	(31,500)
B	8,000	370	350	160,000
			Total	128,500

Scenario 2

(1) Class	(2) Exposures	(3) Prop. Rate	(4) Exp. Cost	(5)=(2)x[(3)-(4)] Profit
A	4,500	500	550	(225,000)
B	7,000	400	350	350,000
			Total	125,000

Part b: 0.5 point

Sample 1

The expected benefit to implement is 128,500 – 125,000 = 3,500. However the implementation cost is 10,000 > 3,500. The proposed rates should not be implemented because the overall benefit does not outweigh the costs.

Sample 2

The proposed rates should be implemented if the company expects these profits to continue in the future. They do $3,500 better each year they implement. In about 3 years (assuming yearly policies) they will make their money back and start making profit on the $10,000 investment.

Sample 3

Implementing the proposed rates results in profit of 128,500 including the 10,000 implementation fee results in a profit of 118,500 which is less than if the current rates continue. But implementing proposed rates seems more equitable and the cost of class A is not being supplemented by the profit of class B as much. Will reduce adverse selection so implement.

EXAMINER'S REPORT

Candidates were expected to understand how to calculate the expected profit given premium, expected loss, and exposure information. Candidates were also expected to determine the impact of implementing a proposed rating plan given an implementation cost.

Part a

Candidates were expected to calculate profit by class for two scenarios by taking the proper (rate – expected cost) x exposures.

Common errors included:

- Incorrectly stating the formula.
    - The proper formula for Scenario 1 is (proposed rate – true expected cost) x projected exposure. Common errors included using current exposures, current rate, or reversing the proposed rate and true expected cost.
    - The proper formula for Scenario 2 is (current rate – true expected cost) x projected exposure. Common errors included using current exposures, proposed rate, or reversing the current rate and true expected cost.
- Stating the formulas correctly but using the wrong values from the question as inputs.

Part b

Candidates were expected to reflect the implementation cost in the proposed rating plan in comparing to the current rating plan and determine if the proposed rates should be implemented given the resulting profit. Both short-term and long-term views of the implementation cost were acceptable.

Common errors included:

- Subtracting the $10,000 implementation cost from the profit in both scenarios; only Scenario 1 had an implementation cost.
- Subtracting the $10,000 implementation cost from Scenario 1 but not comparing it to the profit in Scenario 2.