# CASUALTY ACTUARIAL SOCIETY
AND THE
# CANADIAN INSTITUTE OF ACTUARIES



October 30, 2012

# Exam 8

## Advanced Ratemaking



**4 HOURS**

## INSTRUCTIONS TO CANDIDATES

1. This 54.75 point examination consists of 23 problem and essay questions.

2. For the problem and essay questions, the number of points for each full question and part of a question is indicated at the beginning of the question or part. Answer these questions on the lined sheets provided in your Examination Envelope. Use dark pencil or ink. Do not use multiple colors.

   - Write your Candidate ID number and the examination number, 8, at the top of each answer sheet. Your name, or any other identifying mark, must not appear.
   - Do not answer more than one question on a single sheet of paper. Write only on the front lined side of the paper – **DO NOT WRITE ON THE BACK OF THE PAPER.** Be careful to give the number of the question you are answering on each sheet. If your response cannot be confined to one page, please use additional sheets of paper as necessary. Clearly mark the question number on each page of the response in addition to using a label such as "Page 1 of 2" on the first sheet of paper and then "Page 2 of 2" on the second sheet of paper.
   - The answer should be concise and confined to the question as posed. When a specified number of items are requested, do not offer more items than requested. For example, if you are requested to provide three items, only the first three responses will be graded.
   - In order to receive full credit or to maximize partial credit on mathematical and computational questions, you must clearly outline your approach in either verbal or mathematical form, showing calculations where necessary. Also, you must clearly specify any additional assumptions you have made to answer the question.

3. Do all problems until you reach the last page of the examination where "END OF EXAMINATION" is marked.

4. Prior to the start of the exam you will have a **fifteen-minute reading period** in which you can silently read the questions and check the exam booklet for missing or defective pages. A chart indicating the point value for each question is attached to the back of the examination. Writing will NOT be permitted during this time and you will not be permitted to hold pens or pencils. You will also not be allowed to use calculators. The supervisor has additional exams for those candidates who have defective exam booklets.

**CONTINUE TO NEXT PAGE OF INSTRUCTIONS**

- Verify that you have received the reference materials:

  a. National Council on Compensation Insurance, Experience Rating Plan Manual for Workers Compensation and Employers Liability Insurance (*Excerpt from 2012 Study Kit*).
  b. Insurance Services Office, Inc., Commercial General Liability Experience and Schedule Rating Plan.
  c. National Council on Compensation Insurance, Retrospective Rating Plan Manual for Workers Compensation and Employers Liability Insurance (*Excerpt from 2012 Study Kit*).

5. Your Examination Envelope is pre-labeled with your Candidate ID number, name, exam number and test center. Do not remove this label. Keep a record of your Candidate ID number for future inquiries regarding this exam.

6. Candidates must remain in the examination center until two hours after the start of the examination. The examination starts after the reading period is complete. You may leave the examination room to use the restroom with permission from the supervisor. To avoid excessive noise during the end of the examination, candidates may not leave the exam room during the last fifteen minutes of the examination.

7. At the end of the examination, place all answer sheets in the Examination Envelope. Please insert your answer sheets in your envelope in question number order. Insert a numbered page for each question, even if you have not attempted to answer that question. Nothing written in the examination booklet will be graded. Only the answer sheets will be graded. Also place any included reference materials in the Examination Envelope. BEFORE YOU TURN THE EXAMINATION ENVELOPE IN TO THE SUPERVISOR, BE SURE TO SIGN IT IN THE SPACE PROVIDED ABOVE THE CUT-OUT WINDOW.

8. If you have brought a self-addressed, stamped envelope, you may put the examination booklet and scrap paper inside and submit it separately to the supervisor. It will be mailed to you. Do not put the self-addressed stamped envelope inside the Examination Envelope.

   If you do not have a self-addressed, stamped envelope, please place the examination booklet in the Examination Envelope and seal the envelope. You may not take it with you. Do not put scrap paper in the Examination Envelope. The supervisor will collect your scrap paper.

   Candidates may obtain a copy of the examination from the CAS Web Site.

   All extra answer sheets, scrap paper, etc. must be returned to the supervisor for disposal.

9. Candidates must not give or receive assistance of any kind during the examination. Any cheating, any attempt to cheat, assisting others to cheat, or participating therein, or other improper conduct will result in the Casualty Actuarial Society and the Canadian Institute of Actuaries disqualifying the candidate's paper, and such other disciplinary action as may be deemed appropriate within the guidelines of the CAS Policy on Examination Discipline.

10. The exam survey is available on the CAS Web Site in the "Admissions/Exams" section. Please submit your survey by November 15, 2012.

**END OF INSTRUCTIONS**

# EXAM 8 – FALL 2012

1. (2.25 points)

Using Robertson's "NCCI's 2007 Hazard Group Mapping" as a case study, assess the extent to which the author's proposed hazard groups address any three key elements of the American Academy of Actuaries' "Risk Classification Statement of Principles."

**CONTINUED ON NEXT PAGE**

2. (2.25 points)

A private passenger auto insurance company orders a report whenever it writes a policy, showing what other insurance the policyholder has purchased. The following table shows claim frequencies (per 100 earned car-years) for bodily injury liability coverage, split by whether the policyholder has a homeowners policy and whether the policyholder had a prior auto policy:

| | Homeowners Policy | |
|---|---|---|
| Prior Auto Policy | Yes | No |
| Yes | 3 | 5 |
| No | 8 | 12 |

The table does not include the experience of policyholders with missing data.

a. (1.25 points)

Specify the following structural components of a generalized linear model that estimates frequencies for this book of business.

i. Error distribution
ii. Link function
iii. Vector of responses
iv. Vector of model parameters
v. Design matrix

b. (1 point)

Describe how the missing data may cause problems for the company in developing the model, and suggest a solution.

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3. (1.75 points)

The table below shows property claim frequency by year for the last five years. Assume that claim frequencies are Poisson distributed with a mean of 1.5.

| Year | Exposures | Frequency |
|---|---|---|
| 2011 | 118 | 1.5 |
| 2010 | 132 | 1.7 |
| 2009 | 121 | 1.3 |
| 2008 | 109 | 1.6 |
| 2007 | 97 | 1.3 |

The critical value for the relevant chi-squared distribution is 9.49.

a. (1.25 points)

Calculate the chi-squared test statistic for whether the claim frequency is shifting over time. Interpret the result.

b. (0.5 point)

Describe a second method for testing whether the claim frequency is shifting over time.

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4. (1.75 points)

An actuary has historical information relating to customer retention. A logistic model was used to estimate the probability of renewal for a given customer. The two variables determined to be significant were the size of rate change and number of phone calls the insured made to the company. The parameter estimates were determined to be as follows:

| Rate Change | Parameter Estimate |
|---|---|
| Decrease to 3.9% increase | 0.3323 |
| 4.0% to 6.9% increase | 0 |
| Increase of 7.0% or more | -0.4172 |

| Number of Phone Calls in Past Year | Parameter Estimate |
|---|---|
| 0 | 0 |
| 1 | -0.2128 |
| 2+ | -0.4239 |

| | |
|---|---|
| Intercept Term | 1.793 |

a. (0.75 point)

Calculate the renewal probability for a customer who has a 7% rate increase and called the company twice in the past year.

b. (1 point)

The company needs policyholder retention to be above 78% to maintain growth and expense ratio goals. A possible strategy is to add the number of phone calls to the classification plan and use the model results to determine the rate increase.

Construct an argument either in favor of or against the strategy above, describing two reasons for that position.

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5. (3 points)

The following data is used to price an excess of loss workers compensation policy:

- Data is available for the following injury types: fatal, permanent total injury (PT), major permanent partial (Major), minor permanent partial (Minor), temporary total (TT), and medical-only (Med).
- A multi-dimensional credibility technique (predicted) was used to estimate the frequency for class 5160.
- Class 5160 is in hazard group F.

| Hazard Group F | | | | | | |
|---|---|---|---|---|---|---|
| | Fatal | PT | Major | Minor | TT | Med |
| Frequency Relativity to TT | 0.006 | 0.006 | 0.085 | 0.37 | 1.00 | 3.6 |
| Severity Relativity to TT | 80 | 100 | 30 | 4 | 1.00 | 0.3 |
| Loss Elimination Ratio at $250,000 | 27% | 22% | 57% | 100% | 100% | 100% |

| | |
|---|---|
| TT Frequency per $100 payroll | 0.0002 |
| TT Severity for Hazard Group F | $10,000 |

| Hazard Group F for Fatal Claims | | | |
|---|---|---|---|
| | Predicted | Raw Data | Holdout Sample |
| Quintile 1 | 0.75 | 0.70 | 0.90 |
| Quintile 2 | 0.90 | 0.90 | 0.95 |
| Quintile 3 | 1.00 | 1.00 | 1.00 |
| Quintile 4 | 1.10 | 1.10 | 1.05 |
| Quintile 5 | 1.25 | 1.30 | 1.10 |
| Mean | 1.00 | 1.00 | 1.00 |

| Hazard Group F for PT Claims | | | |
|---|---|---|---|
| | Predicted | Raw Data | Holdout Sample |
| Quintile 1 | 0.70 | 0.75 | 0.80 |
| Quintile 2 | 0.90 | 0.90 | 0.90 |
| Quintile 3 | 1.00 | 1.00 | 1.00 |
| Quintile 4 | 1.15 | 1.20 | 1.10 |
| Quintile 5 | 1.20 | 1.25 | 1.20 |
| Mean | 1.00 | 1.00 | 1.00 |

- The hazard group relativities for Major, Minor, TT, and Med will be used.
- The multi-dimensional credibility relativities for PT claims will be used.
- Class 5160 is in Quintile 4 for both Fatal and PT claims.

a. (1.25 points)

Determine whether multi-dimensional credibility relativities should be used to estimate the expected loss for fatal claims.

b. (1.75 points)

Based on part a. above, calculate the expected loss for an excess of $250,000 workers compensation policy with $10 million in payroll.

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6. (2.5 points)

An insurance company has a private passenger auto book of business with the following claims experience:

| Territory | Years Since Last Accident | Earned Premium at Present Rates for Two Years Since Last Accident | Earned Car Years | Number of Claims | Incurred Loss |
|---|---|---|---|---|---|
| 1 | 0 | $15,000,000 | 15,000 | 5,000 | $9,000,000 |
| 1 | 1 | $125,000,000 | 125,000 | 41,000 | $75,000,000 |
| 1 | 2+ | $230,000,000 | 230,000 | 76,000 | $138,000,000 |
| 2 | 0 | $25,000,000 | 25,000 | 7,000 | $16,000,000 |
| 2 | 1 | $310,000,000 | 300,000 | 84,000 | $187,000,000 |
| 2 | 2+ | $550,000,000 | 535,000 | 147,000 | $328,000,000 |
| 3 | 0 | $10,000,000 | 10,000 | 4,000 | $7,000,000 |
| 3 | 1 | $80,000,000 | 100,000 | 35,000 | $43,000,000 |
| 3 | 2+ | $160,000,000 | 170,000 | 60,000 | $100,000,000 |

Choose an appropriate exposure base for calculating credibility. Justify the selection.

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7. (2.5 points)

A reinsurer uses the following commission structure to pay a ceding company:

| | | |
|---|---|---|
| Provisional commission | 30% | |
| Minimum commission | 20% | At a 75% loss ratio |
| Sliding 1:1 to | 35% | At a 60% loss ratio |
| Sliding 0.5:1 to a maximum | 45% | At a 40% loss ratio |

The aggregate loss distribution model is as follows:

| Range of Loss Ratios | Average Loss Ratio in Range | Probability the Loss Ratio is in Range |
|---|---|---|
| 0 – 40% | 35% | 0.04 |
| 40 – 60% | 55% | 0.32 |
| 60 – 75% | 68% | 0.24 |
| 75% + | 80% | 0.40 |

a. (1 point)

Calculate the expected loss ratio and expected sliding scale commission using the aggregate loss distribution model above.

b. (0.5 point)

Explain what a carryforward provision is and why it is used.

c. (0.5 point)

Assume the prior year's loss ratio was above 75%. Explain what effect a carryforward provision would have on the expected commission for the current year, all else being equal.

d. (0.5 point)

Briefly explain two approaches used in pricing the impact of a carryforward provision.

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8. (3 points)

An actuary decides to use the following exposure curve to price a risk and has determined that the appropriate $b$ parameter is 0.15.

$$G(x) = \frac{1-b^x}{1-b}, \; 0 \le x \le 1$$

a. (1.5 points)

Demonstrate that this function is a valid exposure curve.

b. (1 point)

Given that the maximum possible loss is \$2,000,000, use the selected exposure curve above to determine the ratio of pure risk premium in the layer \$1,000,000 excess of \$500,000.

c. (0.5 point)

Discuss the appropriateness of the ratio of pure risk premium calculated above if the $b$ parameter that the actuary selected was too high. State whether the actuary has underestimated or overestimated the probability of a total loss.

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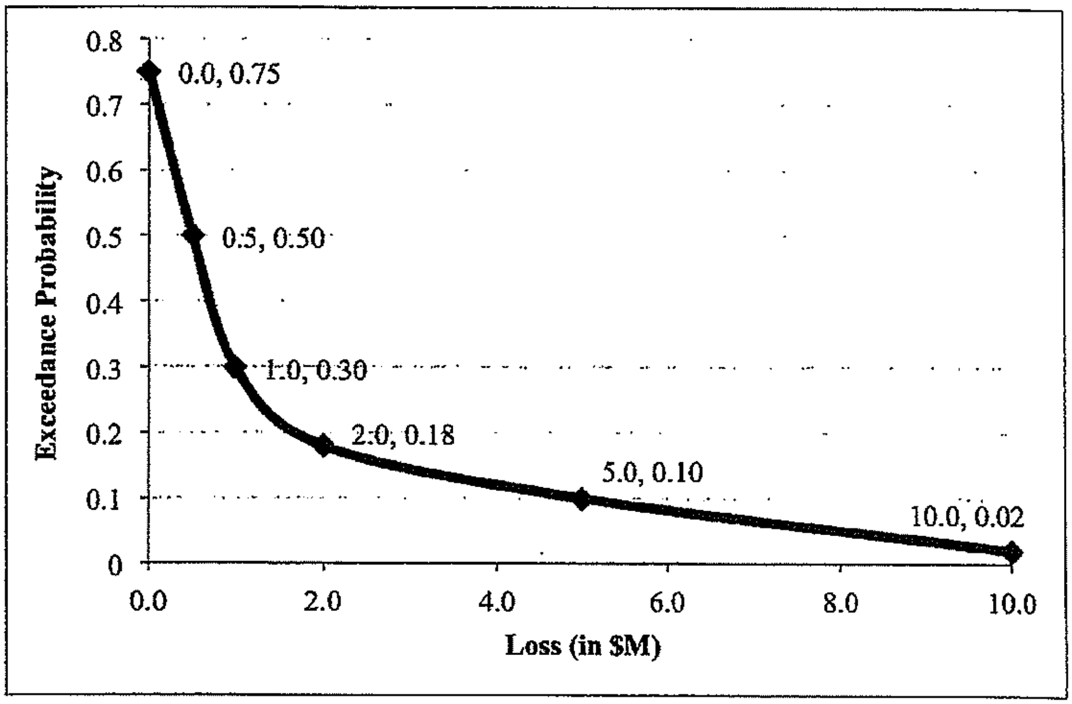
9. (1.5 points)

The following exceedance probability curve is available for an insurer's portfolio:




a. (0.25 point)

Briefly explain what an exceedance probability curve represents.

b. (0.5 point)

The insurer wants to hold capital to support a 1 in 25 year Probable Maximum Loss (PML). Determine the loss level associated with this PML implied by the exceedance probability curve above.

c. (0.75 point)

Briefly discuss three common uses for exceedance probability curves.

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10. (2 points)

An actuary has calculated an exposure curve using 10 years of the company's historical commercial property data, comprised of the following portfolio. All insured values used to calculate the exposure curve are on a per location basis.

| Insured Value Range | Number of Risks | Total Premium | Pure Premium per Location |
|---|---|---|---|
| $500,000 – $1,000,000 | 415 | $23,810,000 | $34,539 |
| $1,000,001 – $2,500,000 | 650 | $90,400,000 | $80,665 |
| $2,500,001 – $5,000,000 | 350 | $92,970,000 | $172,659 |
| $5,000,001 – $10,000,000 | 180 | $94,199,600 | $345,399 |

a. (1 point)

Evaluate the actuary's decision to use this book of business to produce an exposure curve.

b. (1 point)

The actuary is considering using the exposure curve to price a commercial property excess of loss treaty. The actuary is given the following information:

- A per risk limits profile for the subject commercial property business
- Ten years of historical ultimate loss ratios for the commercial property business:

| Year | Ultimate Loss Ratio |
|---|---|
| 2011 | 120% |
| 2010 | 40% |
| 2009 | 90% |
| 2008 | 15% |
| 2007 | 150% |
| 2006 | 30% |
| 2005 | 75% |
| 2004 | 10% |
| 2003 | 105% |
| 2002 | 60% |

Evaluate the actuary's decision to use the exposure curve to price the treaty.

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11. (2 points)

The fourth principle of Property and Casualty Insurance Ratemaking states:

> A rate is reasonable and not excessive, inadequate, or unfairly discriminatory if it is an actuarially sound estimate of the expected value of all future costs associated with an individual risk transfer.

a. (1 point)

Defend the assertion that experience rating supports the principle that a rate should not be unfairly discriminatory.

b. (1 point)

Suppose the industry experience rating plan assigns too much credibility to individual experience for large insureds and assigns too little credibility to individual experience for small insureds. Argue that in a competitive insurance market, rates will not be unfairly discriminatory.

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12. (3.5 points)

Undeveloped losses follow a uniform distribution between \$0 and \$500. Each loss has an equal likelihood of developing such that it is multiplied by either 0.75 or 1.25.

a. (1 point)

Calculate the excess ratio at \$400 for undeveloped losses.

b. (1.5 points)

Calculate the excess ratio at \$300 for developed losses.

c. (1 point)

Suppose instead that loss multipliers are uniformly distributed between 0.75 and 1.25.

Determine whether the excess ratio at \$300 for developed losses will be higher than, equal to, or lower than the excess ratio calculated in part b above. Do <u>not</u> attempt to calculate the new excess ratio.

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13. (2 points)

The NCCI uses several procedures to add stability to workers compensation experience rating.

a. (1 point)

Using the NCCI methods as a model, propose two procedures to add stability to terrorism insurance ratemaking.

b. (1 point)

For each procedure in part a. above, provide one argument against including it in terrorism insurance ratemaking.

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14. (4 points)

The following information applies for a commercial general liability insured:

- All historical policies were effective January 1 to December 31.
- All historical policies were written on an occurrence basis.
- The policy effective January 1, 2013 will be on a claims made basis.
- The risk is products/completed operations only.
- The annual basic limit premium is $100,000.
- The expected loss ratio is 70%.
- Experience is being evaluated as of June 30, 2012.
- A large loss is defined as $250,000 or more in combined basic limit indemnity and ALAE.

Assuming all losses that occurred in the experience period meet the requirements to be defined as large losses, calculate the minimum number of large losses that must have occurred to trigger a debit modification for policy year 2013.

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15. (1.75 points)

An actuarial consulting firm is reviewing the inflation assumption used by a large insurer that writes casualty excess of loss coverage. The consulting firm has made the following assumptions regarding the insurer's excess casualty book:

- Overall inflation is 8.0% and is assumed to have the same multiplicative effect on each size of loss.
- The unlimited, ground-up loss severity for the book of business follows a lognormal distribution with the expected loss equal to \$5,890,000.
- The following limited average severities, based on a lognormal distribution, apply to the insurer's excess casualty book:

| Per occurrence limit $k$ | E[g(x;k)] | E[g(x;k/1.08)] |
|---|---|---|
| \$1,000,000 | 715,812 | 675,097 |
| \$2,000,000 | 1,170,998 | 1,112,349 |
| \$3,000,000 | 1,513,415 | 1,444,181 |
| \$10,000,000 | 2,800,239 | 2,710,132 |
| \$20,000,000 | 3,613,385 | 3,524,644 |
| \$30,000,000 | 4,063,944 | 3,981,081 |
| \$40,000,000 | 4,359,735 | 4,282,929 |
| \$50,000,000 | 4,571,783 | 4,500,504 |

a. (1 point)

Using the consulting firm's assumptions, calculate the average increase in excess losses due to inflation for a policy with a \$10,000,000 limit attaching at \$30,000,000.

b. (0.75 point)

The insurer agrees with the consulting firm's overall trend assumption and general methodology, but believes that the average increase calculated in part a. above is too high. Describe any differences in assumptions the insurer may have with the consulting firm.

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16. (2.5 points)

An actuary has experience rated five policies and presented the resulting modification factors to the underwriter. The results are as follows:

| Policy | Experience Mod Factor | Manual Premium | Losses |
|---|---|---|---|
| A | 0.97 | $40,000 | $39,000 |
| B | 1.40 | $10,000 | $14,500 |
| C | 0.95 | $25,000 | $23,500 |
| D | 1.33 | $15,000 | $20,500 |
| E | 0.81 | $45,000 | $33,000 |

a. (0.5 point)

The underwriter targets Policies B and D and states they should not be written because they are undesirable risks. Evaluate the validity of this statement.

b. (1 point)

Calculate the experience rating off-balance for these five risks.

c. (1 point)

Assess whether the plan used to calculate the experience modification factors demonstrates premium equity.

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17. (2.5 points)

An actuary wants to calculate excess ratios for a book of business based on actual data below $200,000, and from a mix of actual data and a fitted Pareto-exponential curve above $200,000. The following data has been compiled:

| Observed Excess Ratios by Hazard Group | | | |
|---|---|---|---|
| Accident Limit | HG A | HG B | HG C |
| $50,000 | 0.42 | 0.46 | 0.58 |
| $100,000 | 0.21 | 0.26 | 0.38 |
| $150,000 | 0.11 | 0.16 | 0.26 |
| $200,000 | 0.06 | 0.11 | 0.18 |
| $250,000 | 0.04 | 0.08 | 0.13 |
| $300,000 | 0.03 | 0.06 | 0.10 |
| $500,000 | 0.01 | 0.03 | 0.05 |

| Excess Ratios from Mixed Pareto-Exponential | |
|---|---|
| Entry Ratio | Excess Ratio |
| 0.25 | 0.785 |
| 0.50 | 0.625 |
| 0.75 | 0.500 |
| 1.00 | 0.400 |
| 1.25 | 0.340 |
| 1.50 | 0.290 |
| 1.75 | 0.255 |
| 2.00 | 0.220 |

| Average Size of Loss Truncated and Shifted to $200,000 | |
|---|---|
| HG A | $75,000 |
| HG B | $100,000 |
| HG C | $200,000 |

a. (1.25 points)

Calculate the excess ratios for the following limits and hazard groups (HG):

i. HG A; $50,000
ii. HG B; $300,000

b. (0.75 point)

Briefly discuss three advantages of using this methodology to generate excess ratios.

c. (0.5 point)

Discuss whether it would be reasonable to fit a single curve rather than multiple curves by hazard group.

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18. (2 points)

The table below provides the actual loss history for 10 similar risks:

| | Sum of Losses Under $200,000 per Accident | Individual Accidents Greater Than $200,000 | |
|---|---|---|---|
| Risk | | Accident 1 | Accident 2 |
| 1 | $300,000 | | |
| 2 | $400,000 | | |
| 3 | $500,000 | | |
| 4 | $600,000 | | |
| 5 | $700,000 | | |
| 6 | $800,000 | | |
| 7 | $900,000 | | |
| 8 | $1,000,000 | $300,000 | |
| 9 | $1,100,000 | $600,000 | |
| 10 | $1,200,000 | $200,000 | $1,400,000 |
| Total | $7,500,000 | $1,100,000 | $1,400,000 |

Construct Table L charges for a loss limit of $500,000 at entry ratios of 1.10, 1.30, 1.60, 1.90 and 2.10.

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19. (2.5 points)

The following applies to a retrospectively rated policy with a $500,000 loss limitation. The insured has elected to include a premium element to stabilize premium adjustments.

| | |
|---|---|
| Standard premium | $2,000,000 |
| Minimum premium | $1,000,000 |
| Maximum premium | $3,000,000 |
| Expected loss | $1,400,000 |
| Actual unlimited losses at second adjustment | $1,700,000 |
| Actual limited losses at second adjustment | $1,500,000 |
| Excess loss factor | 0.15 |
| Loss conversion factor | 1.10 |
| Retrospective development factor at second adjustment | 0.07 |
| Provision for expenses and profit exclusive of taxes | $400,000 |
| Converted insurance charge | $100,000 |
| Tax factor | 1.05 |

a. (2 points)

Calculate the policy's retrospective premium at second adjustment.

b. (0.5 point)

Describe one reason an insurance company would include retrospective development factors in a policy.

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20. (3 points)

An Alaska workers compensation insured has standard premium of $2,000,000. The insured is interested in a large dollar deductible policy with a deductible of $225,000 and an aggregate of $2,850,000.

Assume the expected unlimited loss and ALAE ratio is 75%, and the risk is in hazard group B.

Calculate the total expected loss and ALAE for the large dollar deductible policy.

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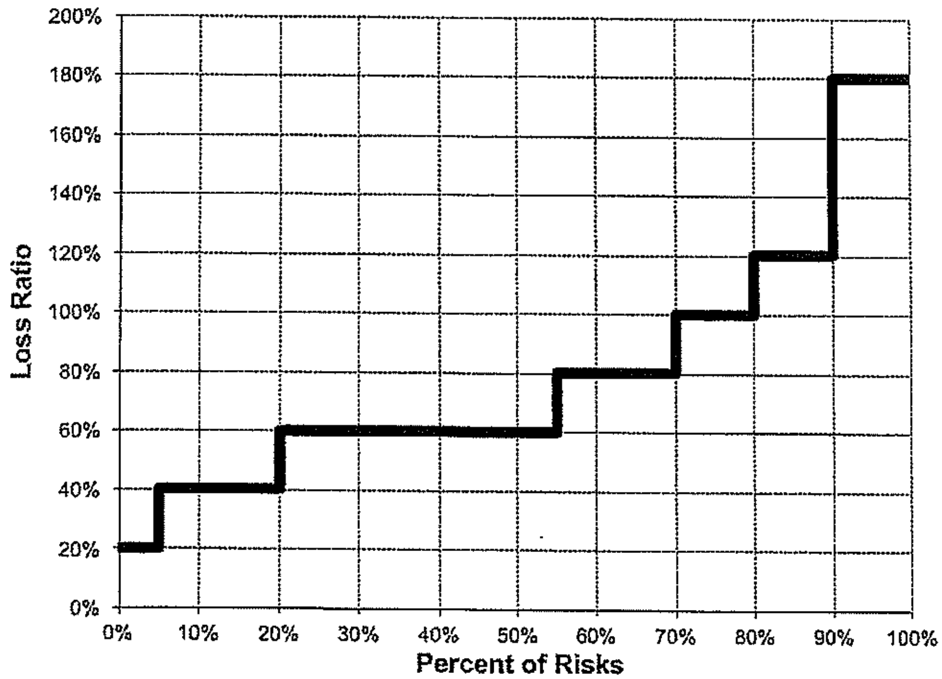
21. (2 points)

A group of similar risks has an average loss ratio of 80%. The following Lee diagram depicts this group of risks:




a. (1.5 points)

Calculate the insurance savings at an entry ratio of 1.125.

b. (0.5 point)

The risks above the 90$^{th}$ percentile have their losses restated, significantly increasing the loss ratio. Describe the change to the insurance savings at an entry ratio of 1.125.

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22. (3 points)

The current deductible pricing for an auto insurer is based on the following claim distribution:

| Size of Loss | Number of Claims |
|---|---|
| \$100 | 21 |
| \$250 | 50 |
| \$500 | 42 |
| \$1,000 | 37 |
| \$5,000 | 22 |

An actuary wants to review the effect of loss trend on the insurer's loss elimination ratios.

a. (1 point)

Calculate the loss elimination ratio for a straight \$500 deductible assuming no trend adjustment.

b. (1.5 points)

Assuming no frequency trend, calculate the percentage change in the loss elimination ratio for a straight \$500 deductible assuming a ground-up loss severity trend of 10%.

c. (0.5 point)

Explain why the loss cost for a given straight deductible policy can increase by more than the ground-up severity trend.

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23. (1.5 points)

The following information is available for a retrospective rating plan:

| | |
|---|---|
| Expected total loss | \$100,000 |
| Maximum loss | \$200,000 |
| Minimum loss | \$50,000 |
| Expense and profit provision (excluding taxes) | \$20,000 |
| Loss conversion factor | 1.35 |

The following is a Table M, for policies of this size:

| Entry Ratio | Charge |
|---|---|
| 0.25 | 0.85 |
| 0.50 | 0.76 |
| 0.75 | 0.69 |
| 1.00 | 0.64 |
| 1.25 | 0.59 |
| 1.50 | 0.56 |
| 1.75 | 0.52 |
| 2.00 | 0.49 |
| 2.25 | 0.46 |
| 2.50 | 0.44 |
| 2.75 | 0.42 |
| 3.00 | 0.40 |

Calculate the basic premium for this policy.

**END OF EXAMINATION**

## Exam 8

| QUESTION | POINT VALUE OF QUESTIONS | (a) | (b) | (c) | (d) | (e) | (f) | (g) |
|---|---|---|---|---|---|---|---|---|
| 1 | 2.25 | | | | | | | |
| 2 | 2.25 | 1.25 | 1 | | | | | |
| 3 | 1.75 | 1.25 | .5 | | | | | |
| 4 | 1.75 | .75 | 1 | | | | | |
| 5 | 3 | 1.25 | 1.75 | | | | | |
| 6 | 2.5 | | | | | | | |
| 7 | 2.5 | 1 | .5 | .5 | .5 | | | |
| 8 | 3 | 1.5 | 1 | .5 | | | | |
| 9 | 1.5 | .25 | .5 | .75 | | | | |
| 10 | 2 | 1 | 1 | | | | | |
| 11 | 2 | 1 | 1 | | | | | |
| 12 | 3.5 | 1 | 1.5 | 1 | | | | |
| 13 | 2 | 1 | 1 | | | | | |
| 14 | 4 | | | | | | | |
| 15 | 1.75 | 1 | .75 | | | | | |
| 16 | 2.5 | .5 | 1 | 1 | | | | |
| 17 | 2.5 | 1.25 | .75 | .5 | | | | |
| 18 | 2 | | | | | | | |
| 19 | 2.5 | 2 | .5 | | | | | |
| 20 | 3 | | | | | | | |
| 21 | 2 | 1.5 | .5 | | | | | |
| 22 | 3 | 1 | 1.5 | .5 | | | | |
| 23 | 1.5 | | | | | | | |
| TOTAL | 54.75 | | | | | | | |