Post Exam Summary Fall 2025

The Post Exam Summary is designed to provide candidates with insightful observations on candidates' exam performance, coupled with expert recommendations for improvement. This resource consists of a general summary section that applies across multiple exams, followed by individual sections for each of the exams administered during the last sitting. We will continue to provide updates and enhancements to the summary in the future.

Announcement on Recent Pass Rates

As shown in the Summary of Exam Statistics published on the CAS website, the percentage of candidates that passed in the Fall 2025 sitting was lower than the historical average for exams 6U and 7 and higher for exam 5. When these percentages fluctuate materially, we often receive questions from candidates and members asking how the pass mark was selected.

The process used to score and determine the pass mark for each exam is described in the "After the Exam" section of the Syllabus of Basic Education. One of the steps noted is to compare the performance of the present year's candidates with the performance of candidates from prior years. For exams 6U and 7, because the percentage passing was lower than average, our exam working groups spent more time on this step than is typical.

- In particular, given we now have banked items where the identical item was used both on the current exam and prior exams, we were able to review performance across sittings on these specific items, and through that process confirmed that the variation in the percentage of candidates passing the exam was supported by differences in the performance on identical items across sittings (e.g., on a specific item, a smaller percentage of candidates met the minimally qualified candidate standard than occurred on a prior sitting).
- We furthermore performed additional analysis of performance patterns across candidate groups, time spent by candidate by item, and consistency of grading across sittings.

After performing all of these additional reviews, we concluded that the standards used to determine the passing candidates are consistent this sitting with prior sittings, and thus the fluctuation in the percentage of candidates passing is reasonable and appropriate.

We understand that lower pass rates can be discouraging. In this Post-Exam Report, we have included some additional detail that we hope can assist candidates in better understanding how they can improve their performance going forward.

General Observations and Study Tips:

Spreadsheet/Test Site Tips

- Candidates should note that the instructions for constructed response/spreadsheet items explicitly say to show all work; graders expect to see enough support on the candidate's answer sheet to follow the calculations performed. While the graders make every attempt to follow calculations that were not well-documented, lack of documentation may result in the deduction of points in cases where the calculations cannot be followed or are not sufficiently supported. Candidates can reference "An Open Letter from a CAS Grader" for additional insights.

- Graders make every effort to locate cells with solutions, but some candidates construct obscure responses within the grey question area. Candidates should attempt to organize their solutions outside of the grey question area and format their solution to assist graders with identifying and assigning credit accordingly.

- The spreadsheet environment allows for the full calculation without rounding. Do not round along any steps of calculations unless explicitly told to do so.

- Candidates should make every attempt to link their final answer in the yellow cell when applicable.

- Candidates should list all assumptions within their solutions. Some candidates thought certain questions were defective and as a result made explicit assumptions to address what they viewed as a defect, but described their assumptions in the survey instead of within their response. Candidates should be mindful that graders can only award credit based on candidate responses to the specific item, and not information included in the survey, so be sure to list assumptions directly on the question.

- In the unlikely event that a question is defective, grading will be adjusted accordingly, and no candidate will be penalized. For example, if a formula given in the question is wrong or contains a typo, both a response using the wrong formula and a response using the correct formula will be considered as correct by the graders.

- Candidates should familiarize themselves with the Pearson VUE environment before taking the exam, and review and practice the functions available in the testing environment to save time during the exam.

- Candidates should not expect all formulas and spreadsheet functionality to work in a similar fashion to other software. Some Microsoft Excel shortcuts are not available in the testing environment, for example locking-in cell references with F4. Common mistakes include anchoring references (need to manually anchor), and not sorting (e.g., using RANK, SMALL, LARGE) correctly. Candidates are encouraged to review the Athena Spreadsheet Function

Comparison.

- Candidates should take care to check cell references in the testing environment. Moving cells can cause absolute references to be removed.

- Candidates should be aware while practicing that questions in the spreadsheet environment might require manipulating a greater volume of data compared to that of prior released exams (ex. 6x6 loss triangles rather than 3x3)

- Candidates should be sure to review the Know Before You Go page on the CAS website for additional information regarding their exam experience as well as information regarding breaks and specific resources related to Pearson Vue.

Exam Questions/Response Tips

- An incorrect response to one part of a question will not preclude candidates from receiving credit for correct work on subsequent parts of the question that depended upon that response.
- Candidates should be sure to show all work on spreadsheet questions. Work done outside the spreadsheet window (e.g. in the Scratch Pad or on a handheld calculator) cannot be seen by graders, makes following candidates' calculations and thought process more difficult, and reduces graders' ability to award partial credit.

- Candidates should be cognizant of the way an exam question is worded. They must look for key words such as "briefly" or "fully" within the problem. For example, some candidates provide lengthy responses to a "briefly describe" question, which only takes up additional time during the exam when a shorter answer would still receive full credit. We refer candidates to the Future Fellows article from December 2009 entitled "The Importance of Adverbs" for additional guidance on this topic.

- Candidates should be familiar with the potential item types as described in the Content Outline.

- All exam questions have been written and graded based on information included in materials that are directly referenced in the official Syllabus of Basic Education and the exam-specific content outlines found on the CAS website. Additionally, terminology used in the items is intended to be consistent with the terminology used in the official text references. Candidates are encouraged to read the text references directly rather than rely solely on alternative sources.

- Candidates should be careful to read the item as it is written. Sometimes the candidate may expect the problem to provide one piece of information (number of variables, e.g.) but it actually provides a different piece of information (number of parameters, e.g.).

- Some Fill in the Blank items require the answer to be in the form of a percentage and candidates should be sure to input the value in the correct format. These items will be indicated by a blank followed by the percentage sign (____%). If, for example, item asks to "round to the nearest 1 decimal place" and the candidate calculates the answer as 89.688%, the candidate should input "89.7" as the answer.

- The exam committee appreciates comments made during the exam, especially when candidates feel there is an ambiguity in the item. These comments are read and help both the grading of the exam and the development of future exams.
- Where judgment is applied, candidates should include a few words on why they have made a certain selection, to help graders understand the observations that the candidate is making.
- Candidates should make sure to fully answer a subpart into the designated space for the subpart so that the entirety of their answer is graded. Candidates should note that graders do not see the other subparts' answers when grading a given subpart. This does not result in no grade or credit; however, it requires additional work for the grader to access the candidate's intended solution.
- We do our best to make sure the information given in the prompt uses similar language and conventions as those in the text references. However, candidates should still read and trust the instructions given in the prompt, even if they seem to indicate a difference from the text references. For example, the labels on the graph are there to give context to the graph, and the candidate should not assume that the graph is the same as one found in the text references.

Exam MAS-I Specific Comments:

- Candidates should review section 12.1 of Tse – many candidates struggled to apply methods of moments correctly in estimating parameters.
- Candidates should review section 6.3 of James et al. – many candidates struggled to use information about a principle components regression to back into the coefficients of the regression from the original linear model. Candidates also struggled to use information about partial least squares to calculate scores for given observations.
- Candidates should review chapter 9 of Ross – many candidates struggled to use information about independent systems to calculate their expected failure time.
- Candidates should review chapter 4 of Ross – many candidates struggled to identify the features of a given Markov chain.
- Candidates should review Dobson et al. broadly to better understand the applications of extended linear models – many candidates struggled to identify the most appropriate model specification when given several possible applications.
- Candidates should review section 4.4 of Hogg et al. – many candidates had difficulty identifying the distribution of a sample median. In particular, candidates should make sure to develop an intuitive understanding of the features of the distribution beyond its mathematical formulation.

- One item was excluded from the grading process due to the label of the given information not being consistent with the given data and the intent of the question.

Exam MAS-II Specific Comments:

- General Comments
    - Candidates should remember that numbers presented in the exam questions are rounded figures. Calculations involving high levels of precision in practice (sum of squares of loading vectors, sum of percentages in a column, e.g.) may not work out perfectly in the exam. When there are differences that could be explained by rounding, candidates should assume that those differences are indeed due to rounding. No exam item is intended to use rounding differences as a means of tricking candidates into performing a balancing calculation.
    - For multiple select items, the prompt will specify how many options to choose. Candidates who do not select the exact number of options specified will not receive any credit for the item. Candidates who believe the item is defective may note that in the item comments but should still select the option choices the candidate believes are the best.
    - Most items on the MAS-II exam have an Understand and Apply cognitive level, but there are items that reach the Analyze and Evaluate cognitive level. While these answers may seem more subjective than the straight-forward calculation items, the correct answer choice is based on the primary considerations outlined in the source text. Candidates should select the best response that synthesizes information given in the item with these considerations.

- Candidates should understand how to calculate predicted values from the model output. This includes:
    - Conditional and unconditional (marginal) predicted values from a Linear Mixed Model (West 3.9)
    - Tree-based regression and classification (James et al. 8)
    - Neural networks (James et al. 10)
    - Fitted values (or observed values if given the white noise) for various time series, such as:
        - Auto regressive (Cowpertwait 4.6)
        - Regression (Cowpertwait 5.6.2), including the log-regression correction (Cowpertwait 5.10.2)
        - Moving average (Cowpertwait 6.3.1)
- Candidates should understand how Linear Mixed Models are structured, including which variables may be used as fixed factors, random factors, or both (West chapter 2.1.2). Candidates should also understand when a hierarchical structure is present (West 2.1.1), including when the model features crossed random factors (West 8.3.1.2).
- Candidates should be prepared to calculate proportion of variance explained for each principal component. There are multiple ways to approach this based on the information provided, and candidates should understand how the total variance of the dataset relates to the variance of each principal component and the error of the M-dimensional approximation of the data using principal components (James et al. 12.2.3).

- Candidates should understand that model lift is a general term that measures the economic value of a model. In a simple quantile plot, the economic value of a model is not only shown in the vertical distance between the first and last quantiles but also shown in predictive accuracy and monotonicity (GLM 7.2.1).
- Candidates should understand the decomposition of a time series and understand the separation of the roles that the trend, seasonal, and random components have on influencing the observed value (Cowpertwait 1.5).
- Candidates should understand the connection between a time series and what should be expected from its associated diagnostic plots, such as a correlogram (Cowpertwait 4.4).

Exam 5 Specific Comments:

- Candidates struggled with the concept and mechanics of trending as a whole, particularly with determination of trend length (trend from and trend to dates). Candidates should be familiar with which components of an indication or reserving methods require values to be trended as well. We recommend referring to past released questions and examples in Werner Modlin or Friedland for additional clarity.
- Candidates had difficulty discerning when to use Earned vs Written premium in various calculations like with Loss Ratios or Expense Ratios, and when to use on-leveled premiums (and how to calculate appropriate on-leveling factors).
- We strongly recommend candidates to pay attention to all subparts in a question. Specifically, if an earlier subpart already has asked candidates to calculate a value using a particular method, it is implied that the value would be referred to or used again in a later subpart. Some candidates wasted time on the exam by recalculating the value again with a different method, when their prior answers were valid.
- Candidates should review Fall 2018, Question 23 (ALAE) and Fall 2017, Question 26 (ULAE) to understand the mechanics associated with loss adjustment expenses, and as an example of how these topics may be tested. Candidates should also review Fixed vs Variable expenses, net reinsurance costs, handling losses with various policy limits or ILFS, and monitoring actual vs expected comparisons.
- Candidates should understand the mechanics of unpaid loss estimation techniques. This is a recurring comment due to the volume of candidates that miss crucial steps of the various methods. We would like to remind candidates to review the examples in released exams or source texts to familiarize themselves with all of the methodologies.
- Many candidates believed there was a defective problem on the exam. However, the problem was set up in a way such that the wrong understanding of the concept would have led to that conclusion. For reference, we strongly recommend candidates to understand how loss aggregation works under the various aggregation methods, like Calendar Year vs Accident Year vs Policy Year. In this particular item, some candidates tried to incorrectly calculate incremental reported losses for a calendar year as the sum of incremental paid losses and the various case reserve amounts established at different points in time over the calendar year, rather than as the sum of incremental paid losses and the change in case reserves across the calendar year.
- On questions that involved actuarial selections, many candidates failed to adequately justify their choices. They often selected an option without providing any explanation.

- While graders do their best to follow candidates' work and award partial marks, it's important for candidates to clearly display their work. Many candidates performed all their calculations in single cells which makes it difficult for graders to determine where credit may be warranted. It's important for candidates to properly show and label their work.
- Candidates should consider point values when answering questions. Some candidates provided excessively detailed responses on straightforward questions that asked for “briefly describe”.

Exam 6C Specific Comments:

- Candidates should be familiar with the application of Agricultural Risk Management Programs. Candidates should be familiar with the calculations in Section 4b of the text *Agricultural Risk Management Programs in Canada* and the yield-based plans in Section 4a, and may also refer to Spring 2017, Question 8.
- Candidates had difficulty describing the guidelines of the use of credit information. Candidates should be familiar with the guidelines outlined in the *IBC Code of Conduct for Insurers’ Use of Credit Information*, and the legal case *PIPEDA Report of Findings #2012-005*.
- Candidates should be familiar with the nature of Canadian insurance regulations. Some areas in which candidates struggled on this exam include:
    - Bias and Fairness in Pricing & Underwriting
    - Operational risk management framework to manage the risk of unfairness in actuarial models
- Candidates should be familiar with reinsurance’s effect on financial statements including:
    - Comparing accounting treatments of claim-based vs. premium-based reinsurance cash flows.
    - Understanding the calculation of insurance contract liabilities on a Gross, Net and Ceded basis
- Candidates had difficulty following IFRS 17 guidelines when calculating items on an income statement. Candidates should be familiar with the formulas in Section 4.8, 5.1 & 5.2 of *IFRS 17 – Actuarial Considerations Related to Liability for Remaining Coverage in P&C Insurance Contracts,* in Chapter 4 of *Minimum Capital Test (MCT) for Federally Regulated Property and Casualty Insurance Companies* and *Final 2023 IFRS 17 P&C Insurance Return, Instructions and Forms*.

Exam 6I Specific Comments:

- Domain A (Regulation of Insurance)
    - Performance was generally strong. Candidates, struggled, however, when comparing Takaful and traditional insurance. In any item that asks candidates to compare two items, it is important to ensure responses comment on both of the items being compared, noting how they are similar and how they differ.
- Domain B (Solvency)
    - Candidates performed well.

- Domain C (Financial Reporting)
    - Performance improved significantly, compared to the previous exam sitting.
    - Several candidates struggled on a question that tested material based on disclosures in the financial statement notes.
    - The exam included a high point value question that multiple candidates did not attempt. As partial points are awarded, the best way to approach high point value questions is to answer as much as possible to pick up some partial points.
- Domain D (International Reinsurance)
    - In general, candidate performance was satisfactory.
- Domain E (Professional responsibilities of the Actuary in Financial Reporting)
    - Most candidates performed poorly on Domain E.
    - Understanding the professional responsibilities of an actuary is a key learning objective of this exam. Candidates are expected to read the source material and understand the key concepts discussed within the reading materials.
- Time management
    - Candidates are reminded to manage their time across the entire exam. A few candidates allocated significantly more time on Domain A and B questions than would be expected given the point distribution, leaving not enough time to adequately answer questions in other Domains.

Exam 6U Specific Comments:

- Many candidates struggled with the Financial Reporting and Responsibilities of the Actuary section of the content outline (Section C). This section is 60-75% of the weight of the exam and should be a large focus area when studying to make sure there is understanding of the key Accounting fundamentals and metrics, as well as the Statement of Actuarial Opinion and Actuarial Opinion Summary.
- Some candidates missed the opportunity for partial credit on some questions, where they may have left questions completely blank where they didn't know the ultimate method being asked, they didn't put any information around any of the methods to allow for recognizing their overall knowledge of the topic. A specific example of this is when they were asked about a specific BEAT Tax calculation, they missed the opportunity to calculate the regular taxable income for partial credit.
- Candidates should be very clear in their written responses where they are answering the specific pieces being asked of them so that it is clear they understand the interconnections of the material. When a reason, role, and outcome are all required, it should be clear what information the candidate is using to answer each piece. Most candidates structured their answers well, but some were hard to follow, making it difficult to see they truly understood the question or were simply listing facts they knew about the topic.
- If candidates are asked to evaluate an IRIS ratio, it is expected that they will state the comparison range in addition to whether or not the calculated value is usual or unusual to fully evaluate. Some candidates did not state the range and therefore did not receive full credit.
- Candidates performed poorly in taking the narrative explanations of SAP and GAAP accounting treatments from the source material and translating them into actual balance

sheet items and their impacts. Within that context, candidates also struggled to apply those treatments alongside basic balance sheet transactions required for insurance contracts. Candidates should be able to identify balance sheet items and how those are impacted by different scenarios.
- Many candidates struggled to identify whether specific loss adjustment expense examples were Defense and Cost Containment (DCC) or Adjusting and Other (A&O). This is a specific table in the "CAS Financial Reporting" paper that candidates should be familiar with.
- Some candidates were not familiar with the in-depth reasons for the creation of TRIA and the NFIP and how the federal government and private insurers are both involved in them.
- Many candidates were not familiar with key pieces of Schedule F and the credit risk charge.

Exam 7 Specific Comments:

- Many candidates confused Mack's Calendar Year effects test (as detailed in the Appendix H of the Mack 1994 paper) and Mack's correlation test (as detailed in the Appendix G of the Mack 1994 paper).
- Many candidates were unable to follow all the steps to calculate the confidence interval for an AY ultimate loss, as detailed in section 4 of the Mack 1994 paper, including not knowing how to perform the SE2 calculation (formula 7 of the same paper) or how to calculate alphas.
- In Clark's Curve-Fitting framework, many candidates confused the expected loss ratio (ELR) loss reserve with the Cape Cod loss reserve, omitting the assumption that the ELR is constant for all accident years.
- Many candidates didn't know how to interpret and use the output coefficients from a GLM, and were not able to differentiate between process, parameter, and model risk, as described in the Shapland paper.
- Many candidates weren't able to provide a rationale for purchasing less reinsurance.
- Many candidates didn't properly distinguish between specific dimensions of risk (independent, internal, external) and the factors which may be relevant when internally benchmarking CoVs, in Meyers' Risk Margins framework.
- Some candidates had difficulty with testing the correlation of development factors using the method described in Venter. Candidates should review the test procedure described under the Implication 5 of the Venter Factors paper. A formula for the T distribution used for this test procedure, displayed in one item of the Fall 2025 exam, contained an error. In this case, both answers calculated using the formula as displayed and answers calculated using the correct formula were given credit.
- In another item, a loglikelihood was displayed as 34,000, which was incorrect since a loglikelihood is always a negative number. The number displayed was in fact the proxy for the loglikelihood, as described in Clark's paper section 2.2 (c.f. formula I enclosed in Clark's paper). Candidates were expected to complete the problem using this proxy loglikelihood instead of the actual loglikelihood as stated in the question. In this case, both answers using a proxy loglikelihood as displayed and answers using an actual loglikelihood were given credit.

Exam 8 Specific Comments:

- Overall, candidates performed well in Section A but somewhat poorly in Section B. There were many comments related to wording ambiguity on various questions and candidates are reminded to focus on the text references in Content Outline as questions are written following the wording of the sources. Candidates are also reminded to read the questions carefully and answer directly to what they are being asked.
- Candidates at times performed below expectations on new item types, including Matching, Multiple Choice, and Multiple Selection questions. It is recommended for candidates to consider a "process of elimination" approach to questions and not overthink the responses. Questions are not written intentionally to "trick" candidates.
- Candidates generally performed well on questions related to ASOPs with the exception of the concepts included in ASOP25, Section 3.
- Candidates performed well on questions related to Bailey & Simon.
- Candidates generally performed well on questions related to Couret & Venter but struggled to draw a comparison versus other credibility procedures. As an example, refer to F18 Q2.
- For GLM questions, candidates generally performed well in many sections of this reading with two exceptions. First, some candidates had trouble evaluating the model results and calculating total rating factors and statistics from frequency and severity models. Second, candidates are reminded that Monograph 5, Chapter 10 is included in the Content Outline. Similar to the Fall 2024 sitting, candidates struggled to demonstrate simple understanding on GLM extensions.
- Candidates generally performed as expected on Holmes & Casotto materials. While most candidates had a general understanding on comparing lasso credibility with GLMs and penalty parameter topics, some candidates struggled to identify the shortcomings and benefits using various types of variables and coming up with alternatives suggested in the paper. Readings from Monograph 13, Chapter 6 will help the candidates that have struggled in this topic.
- Candidates generally performed as expected in topics related to Mahler. Two questions from this sitting came from this source materials generating most of the feedback from candidates.
    - First, a question is related to whether there was enough information to calculate the credibility-weighted frequency. For those candidates, we recommend reading Chapters 8 and 9 of the source material to familiarize with wording and calculation of various credibility estimates.
    - Second, there were questions about whether an item related to Mahler's correlation test was defective. After careful review of responses and feedback from candidates, multiple answers were accepted depending on the assumptions that candidates have made. Realizing this question took more time from candidates to solve due to assumptions needed to make, the pass mark has been adjusted accordingly.
- Candidates performed very poorly on Bahnemann related topics. While candidates did well on LCM and ILF calculations, they struggled on other Bahnemann topics. Many candidates received no credit regarding the question that dealt with combining frequency and severity distributions to calculate aggregate loss layers. Many candidates argued the question required the use of Panjer's algorithm to solve for various loss layers. Candidates are reminded that only Chapters 5 and 6 is directly testable and it is not the intention for candidates to use Panjer's algorithm to calculate the loss layers. The correct responses of a

number of candidates do not utilize Panjer's algorithm. As an example, refer to F19 Q2, parts a through d.

- Candidates generally performed well on Fisher et. al. topics. Some candidates struggled with drawing and articulating similarities and differences among various loss sensitive plans. A few candidates reported on the PearsonVue ability to refresh calculation to a heavily computational question; the pass mark has been adjusted to reflect this technical difficulty.
- Candidates performed well on the Fisher Case Study. There is a noticeable improvement trend on this topic in recent years and candidates who struggled are reminded to use the Case Study source directly as part of their studying.
- Candidates performed exceptionally well in NCCI Retro and ISO CGL readings.
- Candidates performed slightly below expectation on NCCI Experience Rating manuals items. The question was to evaluate the magnitude of impacts among various claims. Many candidates did not read the details carefully to see whether the claim is 1) within/outside of the experience period, 2) medical-only claims versus others, and 3) actual vs expected loss amount. As an example, refer to F16 Q10.