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Welcome to the CAS Answering and Grading Insights video, your inside look at how to approach and answer items using exam content and how they are graded.

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This is a joint project between the Candidate Advocate Working Group and Admissions.

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One of the biggest challenges we've heard that candidates face is understanding what graders are looking for in their answers to receive full credit.

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In this video, we'll walk step-by-step through a spreadsheet item from the Fall 2024 sitting of Exam 5.

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These items are now retired and will not be tested moving forward.

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You'll see how a candidate might approach the response and then hear directly from a grader on how a response will be evaluated.

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Each video will break down key elements of a strong response, common mistakes to avoid, and how points are awarded, giving you the knowledge to refine your exam strategy and improve your performance.

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In this video, we begin with the candidate introducing the sample exam question.

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You will then observe the candidate's approach to solving the problem as if they were sitting for the actual exam.

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Following this, a grader will provide insights into how the response would be evaluated and scored.

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An accompanying Excel workbook is provided to follow along with the problem yourself.

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Timestamps have been included for ease of navigation between sections, and a full transcript is also available for reference.

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Let's get started.

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I'm the candidate, and I'm going to be attempting this 1.75 point problem.

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So we're told that given the following, for accident year 2023, we have the cumulative reported claims as of 12 and 18 months.

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We're also provided the reported claims age to ultimate factors for 12, 24, 36, and 48 months.

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We know that the initial expected claims for accident year 2023 was a million.

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We're also told that the estimates of ultimate claims as of December 31st, 2023, were calculated using the reported Bornhutter-Ferguson technique and that losses emerge linearly between development periods.

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They want us to calculate the actual versus expected reported claims emergence for accident year 2023 during the first half of calendar year 2024.

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Now that I've read the problem, I'm going to minimize my toolbar so that I have a little bit more room.

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So they want us to find the reported claims emergence for accident year 2023 during the first half of calendar year 2024.

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So I know that that's going to be the amount of development between 12 and 18 months.

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So we are here, we already have everything we need to calculate the actual claims emergence, so I'm going to start with that.

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That is going to be the cumulative reported claims at 18 months minus the cumulative reported claims at 12 months.

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So that gives us 61,000.

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Next, I need to find what the expected

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emergence would be.

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So I'm going to start by calculating what the accent year 2023 estimated ultimate would have been under the reported Bornhutter-Ferguson technique.

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So that is going to equal.

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And this was calculated at the time as of 2023.

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December 31st.

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So it's going to be the reported claims at the end of 12 months plus 1 minus 1 divided by the reported claims age to ultimate factor at 12 months.

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So 1 minus 1 divided by 1.4 gives us the percentage unpaid.

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And then I'm going to multiply that

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by the initial expected claims.

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So we know that at December 31st, 2023, they estimated an ultimate of close to a million.

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But now I want to take this amount and look at specifically the emergence between 12 and 18%.

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So first I'm going to calculate what the IV and NAR is for accent year 2023.

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which is the ultimate minus the reported claims as of 12 months.

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So that gives us an IBNR of about 285,000.

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Now I need the percentage reported that's between the 12 and 8%, or the, excuse me, the 12 and 18 months.

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However, we're not provided that within our age ultimate factors, so I know that I'm going to need to interpolate for 18 months.

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And we're told that losses emerge linearly between development periods.

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So I'm going to copy this table over into my work section.

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Because when interpolating to get the factors, we need to first convert the development factors to a percentage reported.

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before we can interpolate that.

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So I'm going to divide 1 divided by each of these development factors.

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Copy that down.

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You don't have to do this, but I like to be able to see my percentages as a percentage, so I'm going to go back into my toolbar and convert them to make it a little easier for me to see.

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Now I'm going to calculate what the percentage reported is at 18 months.

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And that since it's losses emerge linearly, I can just take the average of 12 and 24 months percentage reported since 18 is right in the middle.

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All right, now I am ready to calculate my expected emergence.

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And that is going to be our IBNR times the percentage reported at 18% or 18 months minus the percentage reported at 12 months.

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But we have to divide that by 1 minus

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the percentage reported at 12 months.

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So that gives us 59,000.

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However, the question asks us to calculate the actual versus expected.

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So they're asking us for the difference between those two.

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So I'm going to do it as expected emergence minus actual emergence

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which is negative 21,000.

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So now I need to enter the final response into cell H21.

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So I'm going to do equal, select my solution, and that's my answer, negative 21,000 or negative, oh, negative 2000.

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Hi, I'm the grader for this question, and this is a 1.75 point question with a calculation involved.

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The rubric specifies three sections that the candidate should be able to get based on the information from this question.

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That would be one, calculating the actual emergence, two, calculating the expected emergence, and then three, taking the difference as the answer.

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based on what the candidate has done for this question.

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This is a full point response, and so what I will step through is just some of the key things that graders would want candidates to watch out for when they attempt this question.

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So to calculate actual emergence is fairly straightforward.

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The information is provided in the question.

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Looking at expected emergence, that's where we would want candidates to really understand the information provided in the question and use that information in their solution.

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For example, we tell candidates that the ultimate loss is estimated using the reported BF method, and so when candidates estimate what the ultimate is for accident year 23, we would want them to use.

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the reported BF method and not a different approach.

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For example, say the chain ladder approach.

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The other piece of information we provide candidates is that losses emerge linearly.

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So candidates should be able to first take the reciprocal of the cumulative development factors.

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So invert them first to get a percentage reported curve.

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and then take the interpolation of that vector to get the 18-month percentage reported before calculating the expected emergence.

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So those are two key assumptions that we would want candidates to see and are areas where candidates potentially have different assumptions and may not score full credit.

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From that point on, if a candidate can demonstrate that they've correctly calculated the ultimate loss and correctly calculated the emergence,

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between the six months following year-end 2023.

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How they decide to come up with the expected emergence, whether it's to take the unreported portion and move that forward six months, or to take the full ultimate loss and move that forward six months, either of those approaches would be accepted for this solution.

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The rubric actually outlines both as acceptable solutions.

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Candidates have some flexibility here as long as they specify their assumptions, graders will accept either approach.

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Then finally, once they have the expected and the actual emergence, the question asks for the difference, and so it doesn't specify which order.

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In this case, graders will accept whether it's actual minus expected or expected minus actual.