



Article from

Actuary of the Future

May 2019

Issue 44

Overcoming SOA Preliminary Exams

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I am currently a sophomore at the University of Minnesota, studying actuarial mathematics. I have passed four exams in just a short 16 months, and I am currently studying for the LTAM (Long-Term Actuarial Mathematics [April 2019]) exam. I'd like to share some of the tips I've developed from my sittings for preliminary exams.

One question I have often been asked in internship interviews is "How have you passed so many exams already?" My generic response was to briefly explain the steps I took in preparing for an exam—essentially a practice exam a day and then diligently reviewing questions I got wrong until I understood each concept. The interviewer usually said something along the lines of "Wow, that's a lot of work and time." My method takes a lot of time, and certainly there are many other things I would rather be doing than taking practice exams, but I run under the banner that it'll all be worth it once I'm credentialed.

THE PROCESS

Here are the high-level steps I've used to pass four exams while studying at the university:

1. Read, study and take notes on the exam's manual.
2. Use a practice exam program for 30 to 45 days.
3. Final touches before the exam.
4. Take the exam.

I understand that some readers will be employed full-time and may not have the time to study at the same level as I describe in my process. I've noted some modifications that I've made during finals or when I was too busy with sports to strictly adhere to my ideal method.

STUDY THE EXAM MANUAL

I spent 10 to 15 days reading and taking notes on each exam's manual¹—this included working through all the examples in the text. I personally used a formal study program manual, but I'm sure any study manual you use will work. While going through the material, on a printed-out formula sheet, I added my own

notes and helpful tips. For example, while studying for Exam P, I added a small note on tabular integration, which was a useful and quick way around integration by parts.

When I was short on time, I would limit my studying of the manual, prioritizing practice exams over learning everything in the manual.

I believe walking into the exam room overprepared feels a lot better than rolling the dice when you're underprepared.

USE A FORMAL STUDY PROGRAM

For Exam P, I took increasingly difficult practice exams every single day for the 30 days leading up to my sitting, with the ultimate goal of reaching a score of 70 percent or higher on practice exams that have approximately 7 out of 10 difficulty. Whenever possible, I took the practice exams in one sitting, to simulate the real exam's environment. On the first five or so practice exams, I would use the formula sheet just to start to get comfortable with it. After those initial practice exams, I no longer used the formula sheet except to add more of the obscure notes that I picked up along the way in the review process.

The key to my method was that if I did not confidently know the answer to a problem, I would leave it blank. I would still try most problems, but if I ended up not being confident in my answer, then I would leave the solution blank and mark it for review. After receiving back the graded/corrected test, I marked each problem I left blank or got wrong and reviewed them. I took special care on the problems I got wrong because, to me, that meant I thought I understood the problem, but I didn't really know what the question was asking. During this review, I make sure I fully understand how to do a problem before I move on since my review process will have me revisiting the problem in the next few days.

The following day, prior to taking another practice exam, I review each of the practice problems from previous exam(s) that I still had flagged for review. I revisit each problem and try and solve it on my own, without looking at the solution. If I answer it correctly this time around, I unflag the problem and move on. If I am still unable to solve it on my own, I *relearn* it and leave it flagged for the next day(s). I repeat this process until every flagged question on each previous exam is revisited.

Following is an example of what Day #3 would entail. I would revisit 10 flagged problems from Exam #1, successfully solving 5 of them and leaving 5 problems flagged. I would then revisit 15 flagged problems from Exam #2, successfully solving 7 of them, leaving 8 problems flagged. Then, I would take Exam #3. I scored a 17 out of a 30, meaning that I would flag 13 problems. I would attempt to learn the 13 problems during my post-exam review, leaving them flagged for Day #4's review. After a few exams, I started leaving a Post-it on my laptop with each practice exam's number and the number of questions I still had left to review from it—this ensured I wouldn't be wasting time clicking through exams without any remaining flagged problems.

Your score on practice exams will slowly go up after you start recognizing problem types from your reviews. For those attempting their first actuarial exam, know that when I took my first practice exam for P, I was only able to successfully complete 6 of the 30 problems. It was very overwhelming for me at first, so I highly recommend allowing more time for reviewing the

first few practice exams. It will get easier. Being overwhelmed at first is par for the course.

When I was short on time, I would alternate a day of thoroughly attempting, reviewing, and learning problems I'd missed in the past with a day of taking and reviewing a new exam.

FINAL TOUCHES BEFORE THE EXAM

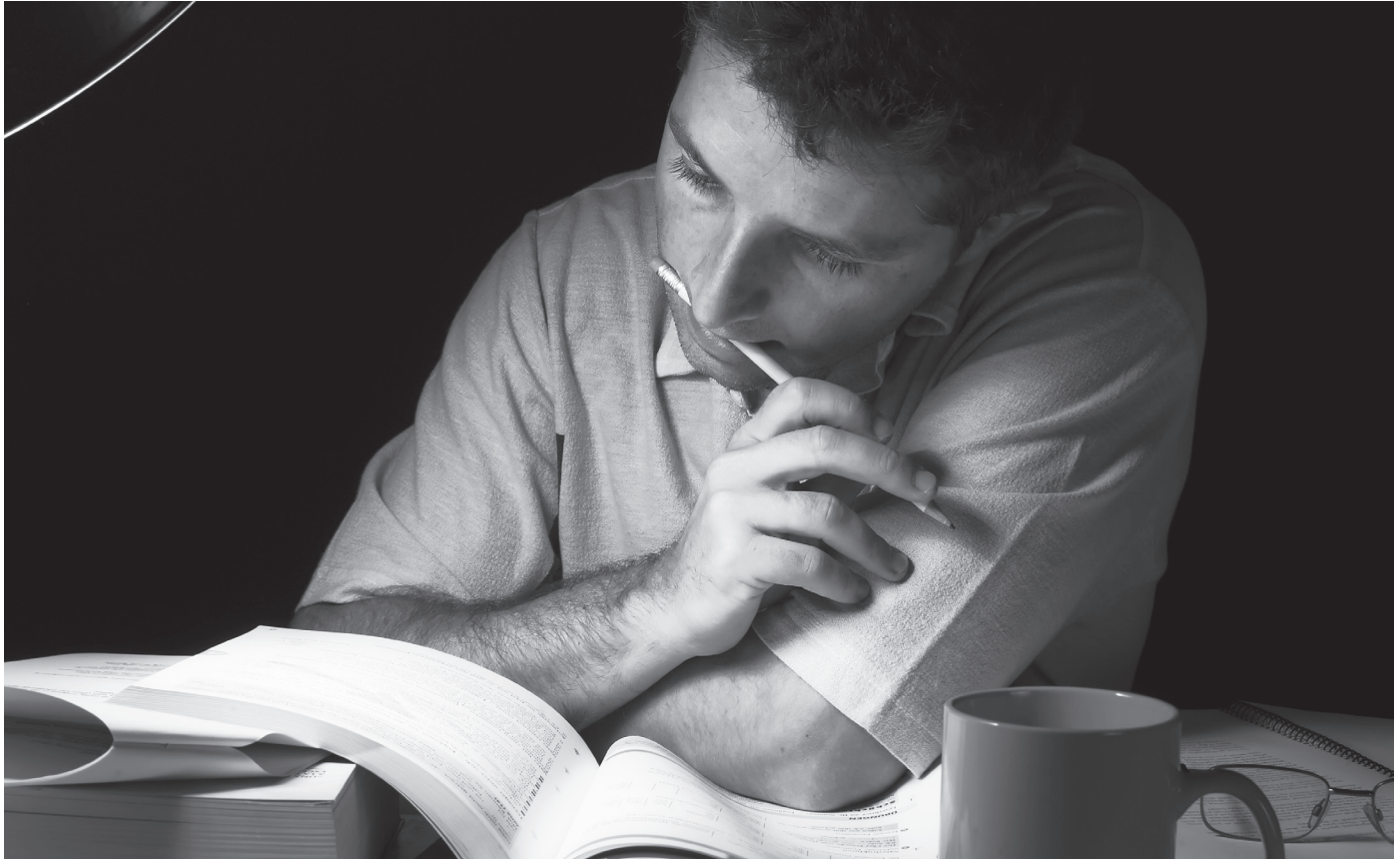
After you reach “level” 7 (out of 10) practice exams, most of the hard work has been done! Depending on how far out from the exam you are, start alternating practice exams with problem difficulty levels of between 5 and 6, as I've come to believe that spending time reviewing problems with a difficulty of 8 or higher is a waste of time. In addition, at this point, I really focused on re-creating exam conditions, such as one straight sitting, no formula sheet, number 2 pencils and unlined scratch paper. This might seem over the top, but it really helped me get over the test-day jitters.

Depending on the number of days remaining before the exam, I would take a few practice exams using only past SOA questions, just to get a feel for the types of questions that have actually appeared on past exams. I think the exam prep program I use has done a great job modeling their practice problems on the SOA questions, but doing this gave me a little more confidence heading into the final exam. I would also work on a few daily quiz topics that I struggled with (the exam prep material I used had an easy way to identify these weaknesses by topic).

Here is some more advice that you might find helpful:

- I rigorously tracked study hours using grid paper once I started taking practice exams. It kept me honest regarding how much I was really studying.
- Give yourself an off day as needed for work, school or mental health.
- Make sure to develop good habits and trust the method that works for you.
- Skip questions with a difficulty of 8, because in my experience, they are not worth the time it takes to learn them. These won't be the types of problems that are the difference between a pass and a fail.
- Take care of yourself. Don't put too much on your plate and expect to succeed. Take time for physical activity and maybe hang out with friends (occasionally).





- Hope for the best, prepare for the worst. There will be problem types that you have to repeat for multiple weeks—but if you’re patient, you’ll get them eventually.
- Learn tabular integration. It is not fun, but in my experience, it will save you time on more than one exam.
- Keep old study exam material—for me, this has mainly been formula sheets with added notes. I have found FM and P material to be an *integral* part of all of the other exams I have studied for (pun shamelessly intended).

I’ve had some other actuarial students casually dismiss my method as overpreparation, but I believe walking into the exam room overprepared feels a lot better than rolling the dice when you’re underprepared. Everyone has their own method, but I hope this

article gives you some good ideas to use in your exam preparation process. Good luck to those of you who are taking exams! And remember, a practice exam a day keeps the fails away. ■



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ENDNOTE

- 1 For Exam C, there was a very large amount of material, and I started only 45 days out, so I began taking practice exams. I would absolutely recommend giving yourself more time, considering that I scored a 6 on the exam, was stressed for that month and a half and had limited conceptual understanding.