

The single best way to prepare for problem-solving tests is to solve problems—lots of them. Be sure to work problems not previously assigned.

REVIEW

Another important part of preparing involves reviewing class material. Go over class notes and reading. Identify the major concepts and formulas from both. Highlight topics and problems your instructor emphasized. Note why these points are important. Look for fundamental problem types. Typically a course has recognizable groups or types of problems. Make sure you can tell them apart and know how to approach them.

SOLVE PROBLEMS

Analyze problems by answering the following questions: What concepts, formulas, rules, and methods can I apply? How do I begin? Have I seen this problem before? Is it like other problems? Could I work this problem another way or simplify what I did? How does my solution compare with examples from the book and class?

Next to each problem-solving step, write what you did. Spell out what you did and why in your own words. This will make problem-solving techniques more concrete in your mind. Practice working problems out of sequence. For example, work a problem from Chapter 7, Chapter 5, then Chapter 10. This will reveal how problems relate to one another and simulate the test-taking experience.

Create a practice test. Try cutting and pasting a test together using homework questions and similar problems from your textbook.

Work with a time limit. Aim to solve as many problems as you will have on the test within the test time limit (i.e. 30 problems in 50 minutes).

TAKING THE TEST

Write down what you need. Before starting the test, turn it over and jot down formulas, relationships, definitions, etc. Review the test, skimming questions and developing a plan for your work.

Start with easier problems. Begin with those for which you can identify a solution method quickly. This will reduce anxiety and facilitate clear thinking. Watch the clock. Allow more time for high point value problems, and reserve time at the end for reviewing your work and fixing issues.

Try all test problems. If your mind goes blank, relax for a moment and contemplate the problem. Or mark it and return to it later. Be certain that you understand the problem. Mark key words, identify the givens and unknowns in your own words, sketch a diagram or picture of the problem, or try to anticipate the form and characteristics of the solution. For complex problems, list the formulas you consider relevant to the solution, then decide which you will need to get started.

If you still have no solution method, try these tips. Work backwards. Ask yourself, “What do I need to get the answer?” Solve a simpler form of the problem or substitute simple numbers for unknowns. Break a problem into a series of smaller problems, then work each part. Guess an answer and then check it. The checking process may suggest a solution method.

If all else fails, mark the problem and return to it later. You may find clues in subsequent problems that will help you find a solution. If you’re running out of time and still have problems remaining, set the problem up in a solution plan. This means you’ll have a chance of receiving partial credit.