Problem-Solving Tests

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. Another important part of preparing involves reviewing class material...

Review

Go over class notes & reading
Identify the major concepts and formulas from both.

Highlight topics/problems your instructor emphasized
Note why these points are important.

Look for fundamental problem types
Typically a course has recognizable groups/types of problems. Make sure you can tell them apart and know how to approach them.

Solve a Few

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 each other and simulate the test-taking experience.

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).

Create a practice test
Try cutting and pasting a test together using homework as a source for questions, as well similar problems from your textbook.

Taking the Test

Write down what you need
Before starting the test, turn it over and jot down all the formulas, relationships, definitions, etc. that you need to remember.

Review the test
Skim questions and develop a plan for your work. If any thoughts come to you immediately, write them in the margin.

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 any emergencies.

For more difficult questions, have a plan
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 & 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.

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.
Analyzing Returned Problem-Solving Tests

1. Read the comments and suggestions from your professor.
2. Locate the source of the test questions. Did they come from the lectures, the textbook, or homework?
3. Note any alterations. How were the problems changed from those in the notes, text, and homework?
4. Determine the source of your errors and make a plan for next time.

- Did your errors result from carelessness? For example, did you fail to carry a negative sign from one step to another?
- Did you misread questions? For example, did you fail to account for all the given data in your solution method?
- Could you produce the formulas, or did you recall them incorrectly?
- Did you consistently miss the same kind of problem?
- Did you have difficulty on the test because you were too anxious to focus on the questions?
- Were you unable to finish the test because you ran out of time?
- Were you unable to solve problems because you didn’t practice similar ones?