

Some Suggestions for Writing Math Exams at the 000 – 200 level

1. Include problems of varying levels of difficulty. In general, most exam problems should be less difficult than the harder homework problems. Make sure that there are quite a few (at least $1/4$ - $1/3$) very basic problems.
2. Cover the course material thoroughly. Do not dwell too much on several topics to the exclusion of others. Decide up front what weight each topic should get on the exam, and choose problems accordingly.
3. Problems designed to “separate the A’s from the B’s” should represent no more than 15% of the exam.
4. Do not ask essentially the same question more than once.
5. Unless calculations are the main point of your class (as in J010, for example), keep numerical calculations simple.
6. If the exam is multiple choice (and therefore no partial credit), include at least 16 – 20 questions. It is easy to find 5 or 6 problems or questions that can be answered very quickly if one understands the material.
7. Do not include lots of multi-stage problems that test several concepts at once. Two or three should be sufficient. It is important for students to be able to get credit for the basic concepts and procedures they know.
8. Do not tell students what procedures to use in solving the exam problems. Being able to tell which method is appropriate for each problem is one of the things you should be testing. (For example, on a calculus exam, you should not tell students to “use integration by parts to evaluate the following integral.”)
9. You cannot over estimate how difficult students will find your problems or how long it will take them to do them.
10. You never have to try to make up a difficult problem. Students do a very good job of making things more difficult than they should be.