Math 121 Exam 3 Topics

1. Linear Approximation. Be able to approximate the value of an expression, modeling it as $f(x) \approx f(a) + f'(a)(x - a)$. See for example Quiz 5 and the homework assignment for Section 2.8.

2. Exponential and Logarithmic Functions. Be able to compute derivatives involving these expressions. See for example Quiz 6 and the homework assignment for Section 3.3.

3. Exponential Growth and Decay. Be able to solve a problem involving exponential growth, radioactive decay, or Newton's Law of Cooling/Heating. See the homework assignment for Section 3.4.

4. L'Hospital's rule. Be able to identify correctly the indeterminate form of a limit expression and use L'Hospital's Rule to evaluate the limit. See the homework assignment for Section 3.6.

5. Maximum and Minimum Values. Given a function f and a domain $[a, b]$, be able to compute the critical values of f which lie in this domain and be able to identify all local and global maxima and minima. See the homework assignment for Section 4.1.

For further examples of these types of problems, consult the textbook and your notes. Practice these skills by doing some of the review problems at the end of each chapter with the book closed and no notes (although you can bring a single sheet of notes to the exam).