Study Guide for Test 3

I have listed a range of possible practice problems for each of the main concepts covered on the test. I'd suggest looking at the worked out examples in the textbook (I've provided page numbers), and trying a few practice problems (there are a lot) for each concept. Focus on the odd-numbered problems, so you can check your answers against the solutions given in the back of the book. Note that the following is just a list of the material covered in class. Not all of it will be covered on the exam, but all of it is fair game.

Key concepts

For this test, you should know how to do the following :

1. Know the properties of exponential functions and their graphs
Read: 4.1
Practice problems: Sec 4.1 #s 1-40

2. Solve problems involving compound interest (you do not need to memorize the two formulas, but you will need to know when to apply them)
Read: 4.1 examples 9 and 10, 4.4 examples 11-13
Practice problems: Sec 4.1 #s 73-80, Sec 4.4 #s 67-74

3. Know the definition and properties of logarithmic functions and their graphs, and the relationship between exponential and log functions.
Read: 4.2
Practice problems: Sec 4.2 #s 1-64

4. Use the laws of logarithms to expand or condense expressions involving logs
Read: 4.3 (memorize the laws of logarithms given on page 352 in particular, along with the change of base formula on pg 356)
Practice problems: Sec 4.3 13-56, 66 (pay special attention to problem 66)

5. Solve exponential and logarithmic equations
Read: 4.4

6. Solve modeling problems involving population growth and radioactive decay.
Read: 4.5 examples 1-6
Practice problems: sec 4.5 1-20

7. Convert between degrees and radians
Read: 6.1 Example 1

8. Solve problems involving the length of circular arc and the area of a circular sector

Read: 6.1 Examples 4 and 5
Practice problems: Sec 6.1 49-64

9. Solve problems involving linear and angular speed
Read: 6.1 Examples 6 and 7
Practice problems: 6.1 76-84

10. Know all the trigonometric ratios in the context of right triangles, and remember or be able to derive the trig. ratios for “special” angles.
Read: pg 478-480
Practice problems: sec 6.2 23-28

11. Solve right triangles using trigonometric ratios
Read: 6.2 examples 1-4
Practice problems: sec 6.2 1-22, 29-36, 39-42

12. Solve application problems involving right triangles using trig ratios
Read: 6.2 examples 5-7
Practice problems: 6.2 45-65

13. Find reference angles and evaluate trig functions for any angle (know the signs of the various trig functions in different quadrants)
Read: 6.3 examples 1-4
Practice problems: Sec 6.3 1-36

14. Use trig identities to express trig functions in terms of each other, and to evaluate trig functions
Read: 6.3 examples 5-7
Practice problems: Sec 6.3 37-50