Objectives Assessed by MA 153 Test 1
Chapter 1 (not 1.6) and Chapter 2
(See also your eHW assignments, and suggested text homework for more practice.)

1. Understand functional notation and use the graph, table, equation, or verbal description.
   Section **1.1** #1-12, 15, 16, 19, 26cd and **Section 2.1** #35 and **Check Your Understanding** (p 53) #1-10, 30
2. Determine if *y* is a function of *x*.
   Section **1.1** #7, 26ab and **Example 6** on page 6 and **Chapter 1 Review** #1-5, 31, 34
3. Identify whether a function is a (totally) increasing or decreasing function or identify intervals on which it is increasing and decreasing.
   Section 1.2 #9, 22 and **Example 1, 2, 3** on pp 12-13 and **Chapter 1 Review** #1-5 and **Check Your Understanding** (p 53) #13-14.
4. Determine the value of the average rate of change from a table of values, a graph, or an equation
   Section 1.2 #3-7, 10, 11, 15, 21 and **Example 2 and 4** on pp 12-14 and **Chapter 1 Review** #6, 7 and **Check Your Understanding** (p 53) #11-18, 24
5. Understanding the geometric interpretation of the average rate of change and the function notation for the average rate of change. Read bottom of page 13 and 14. S**ection 1.2** #16,17 and **Check Your Understanding** (p 53) #8, 15, 17, 18, 19, 24
6. Given the equation of a linear function, find and interpret its slope and axis intercepts as well as sketch its graph.
   Section 1.3 #12, 23, 24, 27, 29 and **Section 1.4** #37, 40
7. Find a linear model if given an initial value and an average rate of change.
   Section 1.3 #11, 14, 15, 20, 24 and **Section 1.4** #16, 19, 21 and **Section 1.5** #31, 32 and **Chapter 1 Review** #21, 26, 27, 40
8. Find a linear model if given any value (not necessarily its initial value) and an average rate of change.
   Section 1.3 # 22 and **Section 1.4** #12, 30 and **Chapter 1 Review** #15
9. Find a linear model if given any two points.
   Section 1.4 Examples 1 and 2 and Exercises #18, 22-30, 35, 40 and **Section 1.5** #22-25, 34 and **Chapter 1 Review** #10-12, 19, 20
10. Determine if a function is linear.
    Section 1.3 #1-6, 26 and **Chapter 1 Review** #8, 9, 39 and **Check Your Understanding** (p 53) #19, 20, 22
11. Understand the geometric properties of linear functions including:
    - when two lines are parallel and when they are perpendicular
    - when their *y*-intercepts are positive or negative
    - when they are increasing or decreasing (or neither)
    Section 1.5 #1-17, 24,25 and **Chapter 1 Review** #15, 18, 23-25 and **Check Your Understanding** (p 53) #23-40, 43-45
12. Construct linear models and find intersection points to solve problems and make predictions.
    Section 1.5 #31,32,36 and **Example 3** on pp 37-38 and **Check Your Understanding** (p 53) #41- 42 and **Chapter 1 Tools** (pp 58ff) # 31, 32,36
13. Evaluate functions with values that are *expressions* as well as *numbers*.
    Section 2.1 #1-34 and **Chapter 2 Review** #1, 2, 4, 25, 25 and **Check Your Understanding** (p 97) #1-3, 5-10
14. Solve equations and inequalities and interpret the results.
    Section 1.1 #1-4 and **Section 2.1** #1-18, 25, 27 and **Chapter 2 Review** #21-24, 35, 43 and **Check Your Understanding** (p 97) #4, 9 and **Chapter 2 Tools** (pp 102ff) # 77-99
15. Understand the domain and range of a function. Find these if given a function represented by a graph, table, equation, or verbal description.
    Section 2.2 #1-29 and **Chapter 2 Review** #6-8, 10, 36 and **Check Your Understanding** (p 97) #9, 11-20
16. Use a graph, table, or an equation to evaluate a function or its inverse.
    Section **1.1** #1-4, 8-12, 26cd and **Section 2.4** #13-24, 26-32, 35, 40 and **Chapter 2 Review** #37, 38, 41-43.
17. Interpret expressions or equations which involve function notation and inverse function notation.
    Section **1.1** #19, 26cd and **Section 2.1** #35 and **Section 2.4** #13-17, 28-32, 39, 40 and **Chapter 2 Review** #37, 38, 41, 42 and **Check Your Understanding** (p 97) #37-42
18. Determine the concavity of a function.
    Section 2.5 #1-19 and **Section 2.6** #27, 31 and **Check Your Understanding** (p 98) #37-42
19. Find and interpret the zeros of a function using the quadratic formula or factoring. Understand the factored form of a quadratic function. Find the maximum or minimum value. Solve quadratic equations algebraically, graphically, or using a table.
    Section 2.1 #9 and **Section 2.6** #1-28, 30, 31 and **Chapter 2 Review** #5 and **Check Your Understanding** (p 98) #43-51 and **Chapter 2 Tools** (pp 103ff) # 28-80, 87-96.
20. Use a graphing calculator to graph a function in an appropriate viewing window. Use built-in calculator features such as an intersection point finder, maximum/minimum finder, or zero finder to solve problems. **Section 1.3** –26-30 and **Section 2.6** #33

Start your review by doing the following:
Check Your Understanding Chapter 1 (page 53): 1-45
Check Your Understanding Chapter 2 (page 97): 1-20, 26-33, 37-51