

## Topic Checklist for Test 4

### College Algebra

#### Format

- The exam will be around 5 pages long.
- It is a paper and pencil exam – it will not be on the computer.
- You will need to show your work.
- You may use a scientific or graphing calculator.
- The exam should last you around 50 minutes, but it is not timed. That said, you must finish the exam after you begin it and cannot leave part way thru and then complete it later.

#### Basic Content

- You are responsible for supplemental sections 4.1 and 4.2 as well as Section 4 of the financial math handout on Compound Interest.
- In addition to the material in the sections, you are responsible for all of the basic facts you have learned since kindergarten. These include the following facts:
  - Barack Obama is the President of the United States of America
  - $-1^2 = -1$ .
  - “ $\frac{a}{0}$  is undefined”
  - You must be able to read and interpret quotes.

#### Where You Should Be

- You should plan to finish your work two days prior to the exam (or early on the day before the exam at the latest). You should plan to have your homework done by a decent hour on the day before the exam.
- After completing your homework, you should plan on spending 2 to 5 hours studying for this exam (more time is certainly appropriate when necessary).
- A good way to practice is to work thru even problems in each section *with your book* closed.
- Remember, the exam is closed book and closed note. It is also timed. I recommend that you study under the same or similar constraints.

## Topics

### 4.1: Linear Inequalities in Two Variables

- You should be able to determine the “shaded region” given a system of inequalities and a graph.
- You should be able to construct a graph and find the “shaded region” given a system of inequalities.
- You should be able to construct a system of inequalities given a written scenario (a word problem).

### 4.2: Linear Programming; Graphical Methods

- You should be able to optimize an objective function when the feasible region and its corners are given.
- Given an objective function and a system of linear inequalities, you should be able to find the feasible region (the “shaded region”) and optimize the objective function over the feasible region.

### Math of Finance: Section 4 on the Future Value of Investments and Compounding Your Money

- You should know the periodic compound interest formula (4.1).
- What is the difference between  $i$  and  $r$ ?
- Find the future value of an investment (like example 4.5).
- Find the present value of an investment (like example 4.6)
- You should know the continuous compounding formula (gray box on page 21).
- Example 4.9 nicely compares periodic and continuous compounding.
- There are two techniques for finding the interest rate. If interest is compounded continuously, use the method in example 4.11. If it is periodic, use the method in example 4.12.
- Select solutions are in the back of the handout.