Final Exam Review
Chapters 1, 2, 3

Disclaimer: This is my attempt to help you study. The problems below are a very minimal set of problems. You should know the general topics, concepts and problems discussed in class, the textbook or assigned as homework. As well as be able to do problems related to those found in the homework problems and quizzes. Problems on the exam may be on topics not covered in this review sheet and topics here may not appear on the exam. But, this review sheet can give you some extra practice with most of the main concepts covered in the course.

1. The members of a college's student government are polled, and the students are asked to rank their choices for a band to play next semester's "spring fling." The results are as follows:

	Number of Voters							
	11	7	7	5	9	6	5	19
Kings of Leon	1	1	3	4	2	3	2	2
The Black Keys	2	3	1	1	1	4	4	3
Thievery Corporation	4	4	2	2	3	1	1	4
Ray LaMontagne	3	2	4	3	4	2	3	1

   (a) Which band would win a plurality election?

   (b) Which band would win a plurality election with a run-off between the top two?

   (c) Which band is the Borda winner?

   (d) Is there a Condorcet winner?

   (e) If Borda's method is used, could the 19 members who ranked Ray LaMontagne first, Kings of Lion second, the Black Keys third, and Thievery Corporation last obtain a preferable result by voting strategically if the other members voted as shown in the table? Explain and include any relevant calculations.

2. Floor-mart has 12 truck-loads of flat-screen TV's to distribute to its 4 stores. A truckload can't be split, so they want to apportion these shipments based on the number of shoppers a store gets each week. These figures are given in the table below:

Store	Boston	Mansfield	Providence	Hartford
Shoppers per week	28,772	13,472	32,871	43,169

(a) Apportion these using Hamilton's method:

Store	***Shoppers/Wk***	***Natural Quota***	***Initial Allocation***	***Final Allocation***
Boston	28,772			
Mansfield	13,472			
Providence	32,871			
Hartford	43,169			
Total				

(b) Apportion these using Lowndes' method:

Store	***Shoppers/Wk***	***Natural Quota***	***Initial Allocation***	***Rel. Frac. Part***	***Final Allocation***
Boston	28,772				
Mansfield	13,472				
Providence	32,871				
Hartford	43,169				
Total					

(c) Apportion these using Jefferson's method:

Store	***Shoppers/Wk***	***Natural Quota***	***Initial Allocation***	***Modified Quota***	***Final Allocation***
Boston	28,772				
Mansfield	13,472				
Providence	32,871				
Hartford	43,169				
Total					

Store	**Desired Allocation**	**Threshold Divisor**
Boston		
Mansfield		
Providence		
Hartford		

3. Solve for x:

$$\frac{9+(4.3)^{-2.9x}}{8}=44$$

4. Solve for y:

$$6(19-8y)^6=817$$

5. Which will be worth more in 10 years: \$6500 invested at 6.1% simple interest, or \$6500 invested at 5.6% interested, compounded monthly?

6. A bank advertisses a Certificate of Deposit (CD) with 3.75% interest, compounded monthly. If I invest \$1,500 today, how long will it take for my investment to grow to \$2500?

7. I have \$42 I would like to put in a bank account with interest compounded daily. What interest rate would I need if I would like my investment to grow to \$1,000 in 6 years?

8. Suppose that Frank, on his 18th birthday, opens an IRA with an interest rate of 4.5%, compounded monthly. He plans to put \$150 into the account every month until he turns 65. How much will he have in the account on his 65th birthday?

9. Frank's brother, Herman, opens an identical account on his 18th birthday. He would also like to make monthly deposits, but wants to ensure that he has \$750,000 in the account when he turns 65. How large should his monthly deposits be?

10. A young couple is ready to purchase their first house. If they take out a 35-year, \$300,000 mortgage with 5.3% interest compounded monthly, what would be their monthly payments?