REVIEW. This reivew meant to give you some direction while begining to prepare for the third exam on April 14. It can act as a starting point for your studying. The test will not be limited to these problems as any type of problem that was covered in Chapter 4 is a viable test question. You must know definitions, rules, methods, equations and theorems in the chapter. The Chapter Summary and Chapter Review are also good study guides.

- A jar contains 12 black balls and 7 red balls. What is the probability the first ball picked from the jar is red?
- The probability a Cocker-Spaniel has an arthritis-type disease is 0.024. What is the probability that a Cocker-Spaniel does not have arthritis?
- If eight horses run a race, what is the probability of correctly picking the first and second place finishers just by guessing?
- When dealt a five-card hand from a standard deck of cards, what is the probability you receive two different pairs, one of which must be kings? (for example, 2 Kings, 2 sevens, 1 other).
- In keno, there are 80 total numbers, and 20 numbers are chosen as winning numbers in each game. If your keno ticket has ten numbers, what is the probability you got exactly 7 right?
- What is the difference between probability and odds?
- What are the odds a spade is drawn from a deck of cards?
- If the odds of the Red Sox winning the world series this year are 2:7, what are the house odds of the Red Sox winning the world series this year?
- A jar contains 12 black balls and 7 red balls. Draw a tree diagram showing all the possible ways to pick two balls from the jar (without replacing the balls). Include the probabilities on each branch.
- From the above tree diagram, what is the probability you first draw a red ball and second draw a black ball?
- In a survey of 370 college students, I found 274 love math, 107 own an MP3 player, and 85 both love math and own an MP3 player. What is the probability a student from this group loves math but does not have a MP3 player? What is the probability a student from this group loves math if they do not have an MP3 player?
- If P(R)=0.68 and $P(A \cap R)$=0.23, find P(A—R).

- Create a table to describe the following situation. There are 250 red flowers and 250 yellow flowers. There are 97 red roses and the rest of the red flowers are tulips. Also there are 163 yellow tulips and the rest of the yellow flowers are roses. Now what is the probability that if a rose is chosen at random, it will be yellow?

- Explain what is meant by expected value.

- In a certain game, the probability of winning is 0.3, and the probability of losing is 0.7. If a player wins, the player will collect \$50. If the player loses, the player will lose \$5. What is the expected value of this game? If the game is played 100 times, what are the expected winnings of the player?

- An insurance company determines it should charge \$275 to insure your car. The insurance policy covers only the case in which your car is completely destroyed and will pay you \$5000 in this case. Assuming this is fair, what does the insurance company believe is the probability that your car will be completely destroyed?