2/19/2004   MA385 Intro. to Probability   Name:_____

Dr. Lunsford   Quiz 3   (20 Points Total)

Unless otherwise stated, you may leave your answers in combinatorial form.

I. A single card is drawn from each of six well-shuffled standard decks of playing cards (i.e. 52 cards in each deck). Find the probability that at least two of the cards drawn are the same card. Hint: Consider the complement of this event! (4 points)

II. Your intelligence sources have indicated that a spy has put monitoring devices on 3 of the 15 classified computers in your office. Each computer is randomly selected and tested for a monitoring device.

(a) What is the probability that you will only need to test 3 computers to find all of the monitoring devices? (4 points)

(b) What is the probability that you will need to test 6 computers to find all of the monitoring devices? (4 points)

III. A fair four-sided die is rolled. If the roll results in a 1 then a ball is drawn from Urn A. If the roll results in a 2, 3, or 4, then a ball is drawn from Urn B. Urn A contains 5 red balls and 10 blue balls and Urn B contains 3 red balls and 12 blue balls.   Let A be the event that the ball is drawn from Urn A, B be the event that the ball is drawn from Urn B, and R be the event that the ball drawn is red.

(a) What is the probability that a red ball will be drawn? Be sure to write this probability and any formulas you use in terms of the event names given above. (4 points)

(b) If a red ball is drawn, what is the probability that the die roll was a 1? Be sure to write this probability and any formulas you use in terms of the event names given above. (4 points)