| MA 367-01 <br> §5.1-5.2 | QuiZ \#1 |  | same: |
| :--- | :--- | :--- | :--- |

Instructions: Turn in solutions to the following problems by Tuesday (28 January 2003) at Noon. You may give your solutions directly to me, put them under my office door, or place them in my mailbox. E-mail is also acceptable. Fully explain your solutions and calculate the numerical values.

1. Fifteen people are arranged in an order.
(a) In how many ways can this be done?
(b) If individuals of the same gender must be adjacent, and if there are 10 women and 5 men, in how many ways can this be done?
(c) In how many ways can this be done if Jim must be placed (somewhere) before Liam who in turn must come (somewhere) before Lawanda?
(d) In how many ways can the 15 be arranged so that Jim and Lawanda are not adjacent?
2. From a group of 5 men and 5 women,
(a) in how many (unordered) ways can they be paired up to form five couples (each couple contains one person from each gender)?
(b) in how many (unordered) ways can they be paired up to form five pairs (without regard to gender)?
3. A student must answer 5 out of 10 questions on a test. The five questions that are answered must include at least 2 of the first 5 questions. If the order of the answers is not important, in how many different ways can this be done?
4. How many different 5 -card hands consist of
(a) three cards of one kind and two cards of another (a full house)?
(b) exactly two pairs (i.e., a pair of cards from each of two different kinds with no other match in kind)?
