MA 110-07 §2.4	Quiz #4 *score*	Name: _____ 13 February 2001

1. Calculate the numerical values of $_{12}P_4$ and $_{12}C_4$. *(6 points)*

2. How many 5-person committees consisting of exactly 2 Democrats and 3 Republicans can be made from a group of 10 Democrats and 8 Republicans? Explain your counting method. *(7 points)*

3. In a round robin racquetball tournament with 15 entrants, each player must play each other player exactly once. *(7 points)*

   (a) How many matches would be required?

   (b) After the matches are completed, first, second, and third place winners will be determined. How many different such rankings are possible (assume no ties)?