MA 110-06 §3.6 – 3.7	**Quiz #5** *score*	**Name:** _____ **31 March 2003**

1. Two dice are rolled. Find the probability that the sum of the dice is 8 given that neither die is 1. *(5 points)*

2. Two dice are rolled. Let E denote the event that both dice are even. Let F denote the event that the sum of the dice is 8. Are events E and F independent? Explain and justify your response with probability calculations. *(5 points)*

3. An automotive manufacturer gets starters from three factories: A, B, and C. Those from factory A fail in the first three years at a rate of 1%, those from B at a rate of 0.5%, and those from C at 0.75%. If the automotive manufacturer gets 75%, 20%, and 5% of its starters from factories A, B, and C, respectively, find the probability that a starter will fail in a manufactured automobile during the first three years. *(5 points)*

4. A person of hair-color genotype $M^{Bd}M^{Bw}R^+R^-$ (reddish brown hair) mates with a person of genotype $M^{Bd}M^{Bk}R^+R^-$ (chestnut hair). Find the probability that their child will be of genotype $M^{Bd}M^{Bw}R^-R^-$ (light brown hair). *(5 points)*