

MA 110-06 §3.3 – 3.5	<b>Quiz #4</b>	score	Name: _____ 7 March 2003
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INSTRUCTIONS: Explain your counting arguments. Express probabilities rounded to the nearest percent.

1. Let  $A$  and  $B$  be events in a sample space  $S$ . If  $p(A) = 0.4$ ,  $p(B) = 0.6$ , and  $p(A \cup B) = 0.8$ , use the rules of probability to find  $p(A \cap B)$ . (5 points)

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2. From a group of 8 men and 6 women, a 4-person committee is formed by randomly selecting four people. What is the probability that the committee has exactly 2 from each gender? (5 points)

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3. A hat contains twelve cards labelled with the numbers 1 through 12. Each of four people selects a card and returns it to the hat. They do this sequentially so that it is possible the same card was selected by more than one person. Find the probability that this actually happens, i.e., find the probability that there is a match among the four selected cards. (5 points)

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4. A die is rolled. If the result is 1 or 2, player A pays player B \$10. If the result is 3, 4, or 6, player B pays player A \$7. If the result is 5, no money is exchanged. Find the expected value of this game from player A's point of view. (5 points)