Quiz 5A

Name:

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Closed book/notes. Scientific calculators only. For questions 3 and 4, correct answers and all steps must be shown to receive full credit.

1. (1 pt.) Suppose events A and B are disjoint. Which of the following is true?

   (a) $P(A \cup B) = P(A) + P(B)$
   (b) $P(A \cup B) = P(A)P(B)$
   (c) $P(A \cap B) = P(A) + P(B)$
   (d) $P(A \cap B) = P(A)P(B)$

2. (1 pt.) Suppose events A and B are independent. Which of the following is true?

   (a) $P(A \cup B) = P(A) + P(B)$
   (b) $P(A \cup B) = P(A)P(B)$
   (c) $P(A \cap B) = P(A) + P(B)$
   (d) $P(A \cap B) = P(A)P(B)$

   Questions 3-5 are based on the following. Suppose events A, B, C, and D are mutually exclusive with $P(A) = 0.1$, $P(B) = 0.3$, $P(C) = 0.2$, and $P(D) = 0.3$.

3. (3 pts.) Compute $P(A \cup B)$.

4. (4 pts.) Compute $P((A \cup B \cup C \cup D)^C)$.

5. (1 pt.) Based on your answer to the previous question, does the sample space equal the union of all four events?

   Yes   **No**

Grade: /10