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Exam Assistance Note

5.4in Let $A,\,B,\,C$ be three events. Use the basic properties of probabilities to show that

- 1. (2.5 points) $P(A \cup B) \le P(A) + P(B)$
- 2. (2.5 points) $P(A \cup B \cup C) \leq P(A) + P(B) + P(C)$
- 3. (2.5 points) $P(A \cap B) \ge P(A) + P(B) 1$
- 4. (2.5 points) $P(A \cap B \cap C) \ge P(A) + P(B) + P(C) 2$