Read Sections 1.4.3 and 1.5. Answer the following questions. *Hand in this worksheet at the next class.*

1. State the full version of **Bayes' Theorem** as presented in Section 1.4.3.

2. What is the definition of **independent** events?

3. Consider Example 1.35.

   (a) The text asserts that $P(A) = 0.50$, $P(A \mid B) = 0.30$, and $P(A|C) = 0.50$. Justify these assertions.

   (b) Why are events $A$ and $C$ independent? Why are events $A$ and $B$ *not* independent?

4. If $A$ and $B$ are independent events, what can you say about $P(A \cap B)$?

5. What is the definition of **mutually independent** events?