**D116 Quiz 3**

**Name:** _____

1. Let $A$ and $B$ be **disjoint** events such that $\Pr[A \cup B] = 0.9$ and $\Pr[B] = 0.6$. Find $\Pr[A]$.
   Solution: Since $A$ and $B$ are disjoint, we have
   $$\Pr[A \cup B] = \Pr[A] + \Pr[B].$$
   This means $0.9 = \Pr[A] + 0.6$, and so $\Pr[A] = 0.9 - 0.6 = 0.3$.

2. Suppose that $E$ and $F$ are events in a sample space $S$ with $\Pr[E] = 0.5$, $\Pr[F] = 0.3$, and $\Pr[E \cap F] = 0.2$. Find $\Pr[F|E]$.
   Solution: By definition,
   $$\Pr[F|E] = \frac{\Pr[F \cap E]}{\Pr[E]} = \frac{0.2}{0.5} = \frac{2}{5}.$$

♢ End of Quiz ♢