

Quiz 5

True/False - No explanation needed. (2pts)

1. If $P(A|B) = P(B|A)$, then $P(A) = P(B)$. True/False
2. Among other things, the proof of Bayes' Theorem for finding $P(B|A)$ depends on being able to split the probability $P(A)$ as sum of probabilities $P(A \cap B)$ and $P(A \cap \overline{B})$, and then further rewrite these as products of certain other probabilities. True/False

Problems - Need justification. No justification means **zero!**

1. Suppose you flip a coin three time. What is the conditional probability that exactly two flips are tails, given that at least one of flips is a tail? (5pts)

2. A restaurant has 3 chefs. Suppose that if a patron eats a meal prepared by Chef A, B, or C, the probability of dissatisfaction is 0.01, 0.02, and 0.03, respectively. Suppose that Chef A makes 50% of the meals, B makes 25%, and C makes 25% of the meals. If a meal was a failure, what is the probability that it was prepared by Chef A? (5pts)