

Exercises chapter 2

1. Is there a general formula for $p(C|A + B)$? Exercise 2.1
2. A special formula for mutually exclusive propositions. Exercise 2.2. (Note some missing parantheses in eq. (2.67), see errata at course homepage.)
3. Inequalities limiting $p(AB|C)$ and $p(A + B|C)$. Exercise 2.3.
4. Try out the qualitative correspondence with common sense by trying to show the following using probability as extended logic:
 - "If there are clouds it is plausible that it is raining. It is not raining, hence it is less plausible it is cloudy".
5. You have a new friend, John. You are about to visit his home to meet his three brothers: George, Paul and Ringo. You have never met them or heard anything about them but before you enter the house you learn that John is older than Ringo.
 - Use the principle of indifference to assign probabilities to the proposals $A =$ "John is older than George" and $B =$ "John is the oldest of the four brothers".
 - Still before seeing the four brothers, you also learn that George is older than Paul. Again, using the principle of indifference, assign probabilities to proposals A and B .