MM2 – Chapter 15 – Section 2

Pre-Class Question:

What is the difference between $P(AB)$, $P(A+B)$, and $P_A(B)$. Explain in words.

Class Worksheet

A. Drop 5 white balls and 5 five purple balls into a basket. You are going to take out two balls one after another. What are the probabilities?
   1. The first one will be purple?
   2. What is the probability of picking a purple ball after already selecting one?
   3. What is the probability of picking out two purple balls?

   4. How is 1-3 different if you put the first ball back before taking the second ball?

B. Roll 2 6-sided di (i.e., dice). What is the probability of getting 3 and/or 4?
   a. $P(3)$ and $P(4)$?
   b. $P(3\&4) = P(34) = P(3\ and\ 4) = ?$
   c. $P(3|4) = P(34) = P(3\ or\ 4) = ?$

C. Consider the code you wrote in last class: "Design a Monte-Carlo programming script that flips a coin 1,000 times and gives you the probability of getting heads or tails." Can you make it faster?