CSE 494: Artificial Intelligence for Cyber Security Spring 2019

OYO HW 2: Probability Intro (10 points)

1. A and B are mutually exclusive, with Pr(A) = .3 and Pr(B) = .5. What is the probability that (3 points)
   a. either A or B occurs?
   b. A occurs but not B?
   c. both A and B occur?
2. A total of 28% of American men smoke cigarettes, 7% smoke cigars, and 5% smoke both cigars and cigarettes (4 points)
   a. What percentage smoke neither cigarettes nor cigars?
   b. What percentage smoke cigars but not cigarettes?
3. Let's say that any person in this world has a probability of 0.42 that his/her ancestors belonged to a certain tribe. Assume there is a system that can say whether you descend from that tribe using your blood test, and it is correct 90% of the time. You check your results and it is negative. What is the probability in this case that you actually descend from that tribe? (3 points)