

Exercise 1.2 Conditional Probability

Instructions: You may discuss this assignment with other students in the class, but you must submit your own answers to the questions below. Include an honor pledge with your submission. Submit online and in pdf. This exercise is ungraded.

1. Prisoners A, B, & C are in jail and the jailer tells them that one will be executed & the other two set free. Prisoner A asks the jailer to tell him the name of one of the prisoners to be set free. The jailer refuses because he says prisoner A's probability of execution will go from $1/3$ to $1/2$. Is the jailer right?
2. Suppose an ebola test is available with $FP = 2.3\%$ and $FN = 1.4\%$. You have no reason to think you have ebola, but you take the test and it comes back positive. If the prevalence of ebola in the general population is 1:10,000, what is the probability you have ebola based on this test?