1. A crime is committed by one of two suspects, A and B. Initially, there is equal evidence against both of them. In further investigation at the crime scene, it is found that the guilty party had a blood type found in 10% of the population. Suspect A does match this blood type, whereas the blood type of Suspect B is unknown. (a) Given this new information, what is the probability that A is the guilty party? (b) Given this new information, what is the probability that B’s blood type matches that found at the crime scene?

**Consider, the events**E1,E2E1,E2**and A**P(E1)=12.P(E2)=12P(E1)=12.P(E2)=12P(E1/A)=20×100100×100,P(E2/A)=20×20100×100P(E1/A)=20×100100×100,P(E2/A)=20×20100×100∴∴**Required probability**P(A/E1)=P(E1)×P(E1/A)P(E1)×P(E1/A)+P(E2)×P(E2/A)P(A/E1)=P(E1)×P(E1/A)P(E1)×P(E1/A)+P(E2)×P(E2/A)=12×20×100100×10012×20×100100×100+12×20×20100×100=12×20×100100×10012×20×100100×100+12×20×20100×100=20×10020×(100+20)=100120=56