PROBABILITY AND THE PRODUCT RULE

Physical evidence often lacks individual characteristics that can tie a suspect conclusively to a crime scene. In such cases, prosecutors must rely on evidence with class characteristics to link the suspect to the crime. The likelihood that the suspect and victim are related depends on the number of pieces of evidence linking them and the uniqueness of the evidence. The following are three cases in which several pieces of evidence link a suspect and a crime. The lists indicate the evidence found in each case, and for each piece of evidence, the frequency of that characteristic in the population at large. In which case do you believe the evidence most strongly suggests the suspect is guilty? (Note that these percentages are used as examples only and are NOT scientifically accurate):

*Case 1*

Blond hair (32%) Type O blood (43%) Arch fingerprints (5%)

*Case 2*

Red hair (11%) Type B blood (12%) Loop fingerprints (65%)

*Case 3*

Brown hair (51%) Type AB blood (3%) Whorl fingerprints (33%)