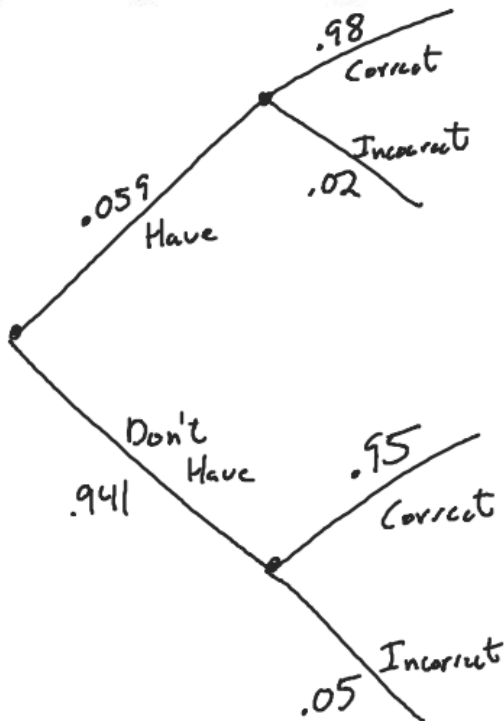


The American Diabetes Association estimates that 5.9% of Americans have diabetes. Suppose that a medical lab has developed a simple diagnostic test for diabetes that is 98% accurate for people who have the disease and 95% accurate for people who do not have it. If the medical lab gives the test to a randomly selected person, what is the probability that the diagnosis is correct?

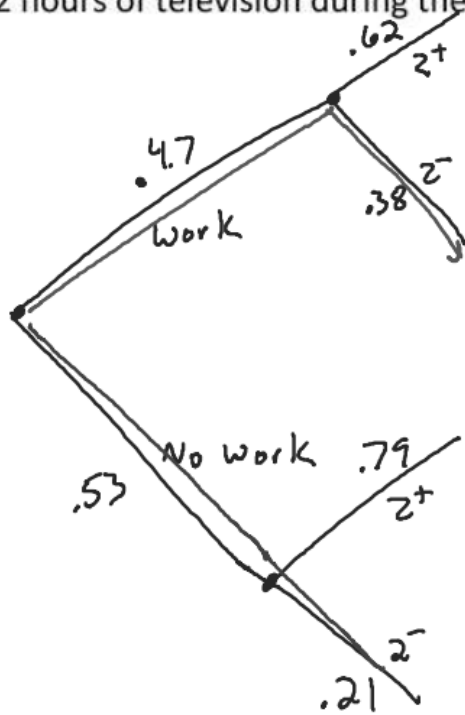


$$\begin{array}{r} 100 \\ - 98 \\ \hline 2 \end{array}$$

$$\begin{array}{r} 100 \\ - 5.9 \\ \hline 94.1 \end{array}$$

$$\begin{aligned} & (H)(\text{Correct}) + (\text{Don't H})(\text{Correct}) \\ & (.059)(.98) + (.941)(.95) \\ & 0.0578 + 0.89395 \\ & .95177 \end{aligned}$$

Suppose a survey of high school students showed that 47% of them worked during the summer. Of those who worked, 62% said they watched 2 hours or more of television per day during the summer. Of those who did not work, 79% watched 2 hours or more. What is the probability that a randomly chosen high school student watched fewer than 2 hours of television during the summer?



$$\begin{aligned}
 & (.47)(.38) + (.53)(.21) \\
 & 0.1786 \quad .1113 \\
 & \quad .2902
 \end{aligned}$$