## Problem 4: Victor and his umbrella

(4/6 points)

Before leaving for work, Victor checks the weather report in order to decide whether to carry an umbrella. On any given day, with probability $0.2$ the forecast is “rain" and with probability $0.8$ the forecast is “no rain". If the forecast is “rain", the probability of actually having rain on that day is $0.8$. On the other hand, if the forecast is “no rain", the probability of actually raining is $0.1$.

1. One day, Victor missed the forecast and it rained. What is the probability that the forecast was “rain"?

   0.6666667 ✔

2. Victor misses the morning forecast with probability $0.2$ on any day in the year. If he misses the forecast, Victor will flip a fair coin to decide whether to carry an umbrella. (We assume that the result of the coin flip is independent from the forecast and the weather.) On any day he sees the forecast, if it says “rain" he will always carry an umbrella, and if it says “no rain" he will not carry an umbrella. Let $U$ be the event that “Victor is carrying an umbrella", and let $N$ be the event that the forecast is “no rain". Are events $U$ and $N$ independent?

   No ✔

3. Victor is carrying an umbrella and it is not raining. What is the probability that he saw the forecast?

   0.8837209 ✖

*You have used 1 of 2 submissions*

## DISCUSSION

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