

7.3 Bayes' Theorem

Problem

Two friends want to go hiking on a Wednesday. Unfortunately, the local meteorologist has predicted rain on Wednesday. Suppose the probability that it will rain on a given day is 5%. If it rains, the meteorologist accurately predicts rain 99% of the time. If it doesn't rain, she inaccurately predicts rain 3% of the time. What is the probability that it will rain on Wednesday? (*Hint: use Bayes' theorem*).