Exercises in Bayes’ Rule

P(D) = .005 P(,D) = .995

P(Pos|D) = .98 P(Neg|D) = .02

P(Neg|,D) = .9 P(Pos|,D) =.1

P(D, Pos) = P(D) x P(Pos|D) = .0049

P(,D, Pos) = P(,D) x P(Pos|,D) = .0995

P(Pos) = .1044

P(D|Pos) = .0469

P(,D|Pos) = .9530

Calculate the probability the test will:

1. Be positive    **.1044**
2. Correctly diagnose a sufferer of Thripshaw’s disease   **.98**
3. Correctly identify a non-sufferer of Thripshaw’s disease  **.9**
4. Misclassify the person

1-(P(Pos|D) x P(D) + P(Neg|,D) x P(,D))

1 - (.98x.005) + (.9 x .995) = .**0996**