1) .
    a. P(M|T<80) = [P(T<80|M) * P(M)]/P(T<80) =
       [P(T<80|M)*P(M)]/[P(M)P(T<80|M)+P(S)P(T<80|S)] = 0.2963
    b. P(T) = P(M|T<80) + P(S|T<80) = 0.30741
    c. P(T<80) = P(M)*P(T<80|M) + P(S)*P(T<80|S) = 0.135
       0.135^3 = 0.00246
2) 1 – P(A)-P(B) = 0.1
   Therefore P is possibly a probability function
3) P(x) = 0.3 0 <= x <= 10
   the integral of P(x) = 0.3x from 0 to 10 which equals 3.0, therefore this is definitely not a valid probability density function
4)