Example My Answer

1.

(a) 0.22

P(A) = 0.1

P(B|A) = 0.5

P(A|B) = 0.2

P(B) = P(A)\*P(B|A)/P(A|B) = 0.1\*0.5/0.2 = 0.25

P(A-) = 1- 0.1 = 0.9

P(B|A-) =P (A-|B) \* P(B)/P(A-) = 0.8\*0.25/0.9 = 0.22

(b)

P Clear

Standard 0.6 0.7

Novel 0.4 0.85

i.

A. 0.76

P(C) = 0.6\*0.7+0.4\*0.85 = 0.76

B. 0.552

P(S|C) = P(S,C) / P(C) = 0.6\*0.7/0.76 = 0.552

ii.

A. 0.997

1-P(C-)^4 = 0.997

B. 0.246

1- no recurrence - one recurrence

no recurrence = 0.76^4 = 0.333

one recurrence = C(4,1) \* 0.76^3\*0.24 = 0.421

2.

village P

A 1/5

B 4/5

(a)

I. 900

500\*1/5+2000\*2/5 = 900

ii. 0.111

100/900

(b)

I. 0.9885

1 - (1-0.36)^10

ii. 0.893

1 - 10 \* (1/5)^10 - 10\*(4/5)^10 = 0.893

3.

(a)

(b)

(d)

(2+4+2+1+1)/25

(e)

*P*(*A, B, C, D, E, F*) = P(E)\*P(F)\*P(D|E,F)\*P(A|D)\*P(B|A)\*P(C|A)

(f)

*P*(*C, D, E, F, G, H) = P(G)\*P(C)\*P(H)\*P(E|G)\*P(F|H)\*P(D|E,C,F)*

*4.*

*(a)*

*I*

*h'(x) = 4x+6*

*h'(y) = 2y-4*

*ii.*

*x' = x - a\*h'(x)*

*y' = y - a\*h'(y)*

*iii.*

*convergence 4x = -6 x = -1.5*

*convergence y = 2*

*h(min) = 3.5*

*(b)*