Question 1

a)

	25-44	45-64	>64	Total
High. Sch. or less	**0.19**	**0.25**	0.16	0.60
University or more	0.25	**0.09**	**0.06**	0.40
Total	0.44	0.34	0.22	**1**

b) No. one outcome will affect another one. With the increasing of age, total number of educational-attainment people is less.

c) Yes, because they have no outcomes in common. The percentage of high-school or less people in category 45-64 are the highest.

d) P= (0.25+0.09)/ 0.40= 0.85

e) 0.09

f) P= 1- (0.22^5) =0.9995

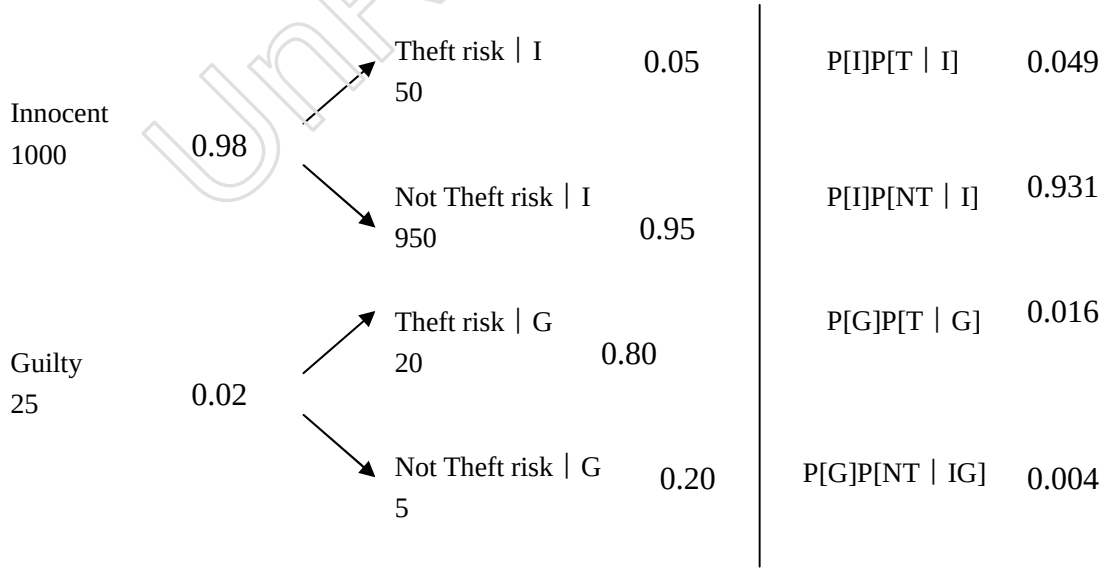
Question 2

a) P= 50/1000= 0.05

b) P= 20/25= 0.8

c) 70 is the total number that flagged by BC as “theft risk”. Just 20 of 70 are guilty people, another 50 are innocent people

d)



e) P= P[I]P[T | I] + P[G]P[T | G] = 0.049 + 0.016 = 0.065

f)

	Theft risk		total
	Y	N	
innocent	50	950	1000
guilty	20	5	25
total	70	955	1025

g) P = 50/70= 0.714

h) P = 20/70= 0.286

i) A separate national survey reveals applicants only 1 out of every 250 will be "guilty". So the probability that a person is labeled "theft risk" is actually guilty is 1/250 = 0.004, but above data is 0.286; the probability that a person is labeled "theft risk" is actually innocent is 1- 0.004= 0.996, but the above data is 0.714. There is more innocent person than guilty people.