Naïve Bayes Classification Alogrithm

# Sl. No	X1 Color	X2 Type	X3 Origin	Y stolen?
1	Red	sports	domestic	yes
2	Red	sports	domestic	no
3	Red	sports	domestic	yes
4	Yellow	sports	domestic	no
5	Yellow	sports	imported	yes
6	Yellow	suv	imported	no
7	Yellow	suv	imported	yes
8	Yellow	suv	domestic	no
9	red	suv	imported	no
10	red	sports	imported	yes
Query	red	suv	domestic	?????

Using Conditional Probability:
P(X/stolen?)= P(stolen? & X)/P(stolen?)

P(stolen?/X)= P(stolen? & X)/P(X)
= P(X/stolen?)*P(stolen?)/P(X)
= ~P(X/stolen?)*P(stolen?)
= ~P(X1/stolen?)*P(X2/stolen?)*P(X3/stolen?)*P(stolen?)

	P(X1/stolen?)	P(X2/stolen?)	P(X3/stolen?)	P(stolen?)	P(stolen?/X)=
	P(red/stolen?)	P(suv/stolen?)	P(domestic/stolen?)		
stolen?=Yes	3/5	1/5	2/5	1/2	0.0240
stolen?=No	2/5	3/5	3/5	1/2	0.0720

The probability of "not stolen" is more than "stolen" given X (red, suv, domestic features)
Therefore, we can classify the query/tuple with "no" using Naïve Bayes Classification Alogrithm

Classification????? no