Rica Mae Jin C. Calugtong

BSIT 3-5

Elective 2

ricamaej

DATASET:

Number	Brand	Color	Time	Stolen / Not
N001	BMW	Black	Night	Yes
N002	Audi	Black	Night	No
N003	Nissan	Red	Night	Yes
N004	Vega	Blue	Day	Yes
N005	BMW	Black	Day	No
N006	Audi	Black	Day	Yes
N007	Vega	Red	Night	No
N008	Audi	Blue	Day	Yes
N009	Vega	Black	Day	Yes
N010	Nissan	Blue	Day	No
N011	BMW	Black	Night	Yes
N012	Nissan	Red	Day	No
N013	Vega	Black	Night	Yes
N014	BMW	Red	Day	No
N015	Audi	Black	Day	Yes
N016	Audi	Blue	Night	Yes
N017	Audi	Red	Day	No
N018	Nissan	Black	Day	Yes
N019	BMW	Blue	Day	Yes
N020	BMW	Red	Night	Yes

P(Brand = o | Stolen/Not = b)

Brand	Yes		No		All	
BMW	4	0.31	2	0.29	6	0.3
Audi	4	0.31	2	0.29	6	0.3
Nissan	2	0.15	2	0.29	4	0.2
Vega	3	0.23	1	0.14	4	0.2

BMW | Yes				BMW | No		
P(BMW | Yes)	4/13	0.31	If Brand is	P(BMW | No)	2/7	0.29
P(Yes)	13/20	0.65	BMW, it	P(No)	7/20	0.35
P(BMW)	6/20	0.3	will be	P(BMW)	6/20	0.3
P(Yes | BMW)	(0.31 × 0.65)/0.3	0.67	stolen	P(No | BMW)	(0.29 × 0.35)/0.3	0.33

Audi | Yes				Audi | No		
P(Audi | Yes)	4/13	0.31	If Brand is	P(Audi | No)	2/7	0.29
P(Yes)	13/20	0.65	Audi, it	P(No)	7/20	0.35
P(Audi)	6/20	0.3	will be	P(Audi)	6/20	0.3
P(Yes | Audi)	(0.31 × 0.65)/0.3	0.67	stolen	P(No | Audi)	(0.29 × 0.35)/0.3	0.33

Nissan | Yes				Nissan | No		
P(Nissan | Yes)	2/13	0.15	If Brand is	P(Nissan | No)	2/7	0.29
P(Yes)	13/20	0.65	Nissan, it will	P(No)	7/20	0.35
P(Nissan)	4/20	0.2	be either stolen	P(Nissan)	4/20	0.2
P(Yes | Nissan)	(0.15 × 0.65)/0.2	0.50	or not	P(No | Nissan)	(0.29 × 0.35)/0.2	0.50

Vega | Yes				Vega | No		
P(Vega | Yes)	3/13	0.23	If Brand is	P(Vega | No)	1/7	0.14
P(Yes)	13/20	0.65	Vega, it will	P(No)	7/20	0.35
P(Vega)	4/20	0.2	be stolen	P(Vega)	4/20	0.2
P(Yes | Vega)	(0.23 × 0.65)/0.2	0.75		P(No | Vega)	(0.08 × 0.35)/0.2	0.25

Jiang

Color	Yes		No		All	
Black	8	0.62	1	0.14	9	0.45
Red	2	0.15	4	0.57	6	0.3
Blue	3	0.23	2	0.29	5	0.25

Black | Yes

P(Black | Yes)	8/13	0.62	If Color is	P(Black | No)	1/7	0.14
P(Yes)	13/20	0.65	Black, it	P(No)	7/20	0.35
P(Black)	9/20	0.45	will be	P(Black)	9/20	0.45
P(Yes | Black)	(0.62×0.65)/0.45	0.89	stolen	P(No | Black)	(0.14×0.35)/0.45	0.11

Red | Yes

P(Red | Yes)	2/13	0.15	If Color is	P(Red | No)	4/7	0.57
P(Yes)	13/20	0.65	Red, it	P(No)	7/20	0.35
P(Red)	6/20	0.3	will not be	P(Red)	6/20	0.3
P(Yes | Red)	(0.15×0.65)/0.3	0.33	stolen	P(No | Red)	(0.57×35)/0.3	0.67

Blue | Yes

P(Blue | Yes)	3/13	0.23	If Color is	P(Blue | No)	2/7	0.29
P(Yes)	13/20	0.65	Blue, it	P(No)	7/20	0.35
P(Blue)	5/20	0.25	will be	P(Blue)	5/20	0.25
P(Yes | Blue)	(0.23×0.65)/0.25	0.60	stolen	P(No | Blue)	(0.29×0.35)/0.25	0.40

fiamj

Time	Yes		No		All	
Night	6	0.46	2	0.29	8	0.4
Day	7	0.54	5	0.71	12	0.6

Night | Yes				Night | No		
P (Night | Yes)	6/13	0.46	If Time is	P (Night | No)	2/7	0.29
P (Yes)	13/20	0.65	Night, it	P (No)	7/20	0.35
P (Night)	8/20	0.4	will be	P (Night)	8/20	0.4
P (Yes | Night)	(0.46 × 0.65)/0.4	0.75	stolen	P (No | Night)	(0.29 × 0.35)/0.4	0.25

Day | Yes				Day | No		
P (Day | Yes)	7/13	0.52	If Time is	P (Day | No)	5/7	0.71
P (Yes)	13/20	0.65	Day, it	P (No)	7/20	0.35
P (Day)	12/20	0.6	will be	P (Day)	12/20	0.6
P (Yes | Day)	(0.52 × 0.65)/0.6	0.58	stolen	P (No | Day)	(0.71 × 0.35)/0.6	0.42

Please calculate the ff:

	Brand	Color	Time	Stolen / Not
	BMW	Black	Day	Yes
P(Yes)	0.67	0.89	0.58	0.53
P(No)	0.33	0.11	0.42	0.04

	Vega	Blue	Night	Yes
P(Yes)	0.75	0.6	0.75	0.52
P(No)	0.25	0.4	0.25	0.07

	Nissan	Blue	Day	Yes
P(Yes)	0.50	0.6	0.58	0.27
P(No)	0.50	0.4	0.42	0.24

	Audi	Red	Night	Yes
P(Yes)	0.67	0.33	0.75	0.26
P(No)	0.33	0.67	0.25	0.16

	Nissan	Red	Night	No
P(Yes)	0.50	0.33	0.75	0.19
P(No)	0.50	0.67	0.25	0.24

ficamos