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Q.2)

~~Temp~~ Frequency Table

	C(x)		Likelihood	
Temp	Yes	No	P(Yes)	P(No)
Hot	1	2	1/4	2/2
Mild	2	0	2/4	0
Cool	1	0	1/4	0
Total	4	2		

	C(x)		Likelihood	
Humidity	Yes	No	P(Yes)	P(No
High	2	2	2/4	2/2
Normal	2	0	2/4	0
Total	4	2		

	C(x)		Likelihood	
~~Win~~	Yes	No	P(Yes)	P(No)
Wind				
Weak	3	1	3/4	1/2
Strong	1	1	1/4	1/2
Total	4	2		

	C(x)	P(Yes) P(No)
Yes	4	4/6
No	2	2/6
Total	6	

Pg 2

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Q 2

Classify (cool, high, weak)

c = cool, h = high, w = weak

C(x) = Yes | no = Y/n

$$P(Y|cnhnw) = \frac{P(c/Y) * P(h/Y) * P(w/Y) * P(Y)}{P(c) * P(h) * P(w)}$$

$$= 1/4 * 2/4 * 3/4 * 4/6$$

$$= \frac{2 \cancel{4}^{1}}{\cancel{16}_{2} \times \cancel{8}_{2} \times 4} = \frac{1}{16}$$

$$= 0.0625$$

$$P(n|cnhnw) = \frac{P(c/n) * P(h/n) * P(w/n) * P(Y)}{P(c) * P(n) * P(w)}$$

$$= 0 * 1 * 1/2 * 2/6$$

$$= 0$$

$$P(C(x)) = P(C(x)) / P(C(x)) + P(!C(x))$$

$$= \frac{0.0625}{0.0625}$$

$$= 1$$

Conclusion shows that Probability of Yes is 100%.

Pg-3

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Q.2

~~Classify (mild, weak~~
Classify (mild, normal, weak)

~~m~~ = mild, N = normal, w = weak

C(x) = Yes / no = Y / n

$$P(Y \mid m \cap N \cap w) = \frac{P(m/Y) * P(N/Y) * P(w/Y) * P(Y)}{P(m) * P(N) * P(w)}$$

$$= 2/4 * 2/4 * 3/4 * 4/6$$

$$= \frac{4 \cancel{8} \cancel{3}}{\cancel{16}_{4} \times 4 \times \cancel{6}_{2}} = \frac{1}{32} = 0.3125$$

$$P(\cancel{N} / m \cap N \cap w) = \frac{P(m/n) * P(N/n) * P(w/n) * P(n)}{P(m) * P(N) * P(w)}$$

$$= 0 * 0 * 3/4 * 2/6$$

$$= 0$$

$$P(C(x)) = P(C(x)) / P(C(x)) + P(\cancel{!}(C(x)))$$

$$= \frac{0.3125}{0 + 0.3125}$$

$$= 1$$

Conclusion shows that probability of Yes is 100%.