

S.N	Gender	B.P	Cholesterol	Smoking
1	male	Normal	Low	No
2	male	Normal	high	Yes
3	female	high	high	No
4	female	high	low	Yes
5	male	high	high	Yes

$$P(\text{Smoking} = \text{Yes}) = \frac{3}{5}$$

$$P(\text{Smoking} = \text{No}) = \frac{2}{5}$$

$$P(\text{Gender} = \text{male} \mid \text{Smoke} = \text{Yes}) = \frac{2}{3}$$

$$P(\text{B.P} = \text{Normal} \mid \text{Smoke} = \text{Yes}) = \frac{2}{3}$$

$$P(\text{Cholesterol} = \text{high} \mid \text{Smoke} = \text{Yes}) = \frac{2}{3}$$

$$P(\text{Gender} = \text{male} \mid \text{Smoke} = \text{No}) = \frac{1}{2}$$

$$P(\text{B.P} = \text{Normal} \mid \text{Smoke} = \text{No}) = \frac{1}{2}$$

$$P(\text{Cholesterol} = \text{high} \mid \text{Smoke} = \text{No}) = \frac{1}{2}$$

$$P(x) = P(\text{Gender} = \text{male}) * P(\text{B.P} = \text{Yes}) * P(\text{Cholesterol} = \text{high})$$

$$= \frac{3}{5} * \frac{3}{5} * \frac{3}{5} = 0.21$$

$$P(\text{Smoke} = \text{Yes} \mid x) = \frac{0.17}{P(x)} = 0.80 - ①$$

$$P(\text{Smoke} = \text{No} | x) = 0.05 / P(x) \\ = 0.23 \text{ --- (2)}$$

Eqn (1) > Eqn (2).

Here the result is true thus the Person Smoking is Yes.