ASSIGNMENT -12

Q1 → What is the probability of a person playing when the weather is sunny? Find P(Yes/Sunny).

Weather	Play
Sunny	No
Overcast	Yes
Rainy	Yes
Sunny	Yes
Sunny	Yes
Overcast	Yes
Rainy	No
Rainy	No
Sunny	Yes
Rainy	Yes
Sunny	No
Overcast	Yes
Overcast	Yes
Rainy	No.

Sol 1 → $P(Sunny) = \dfrac{5}{14}$, $P(Yes) = \dfrac{9}{14}$, $P(Sunny \cap Yes) = \dfrac{3}{14}$

$$P(Sunny/Yes) = \frac{P(Sunny \cap Yes)}{P(Yes)} = \frac{3/14}{9/14} = \frac{1}{3}$$

According to Baye's theorem :-

$$P(Yes/Sunny) = \frac{P(Yes) \cdot P(Sunny/Yes)}{P(Sunny)} = \frac{\dfrac{9}{14} \times \dfrac{1}{3}}{\dfrac{5}{14}} = \boxed{\dfrac{3}{5}}$$