Few questions on Probability

Q. A fair six sided die is rolled. What is the prob of rolling an even number?

→ 1, 2, 3, 4, 5, 6. → $3/6 = 1/2$.

Q. A bag contains 5 red balls and 3 blue balls if one ball is drawn at random what is the prob of drawing red ball?

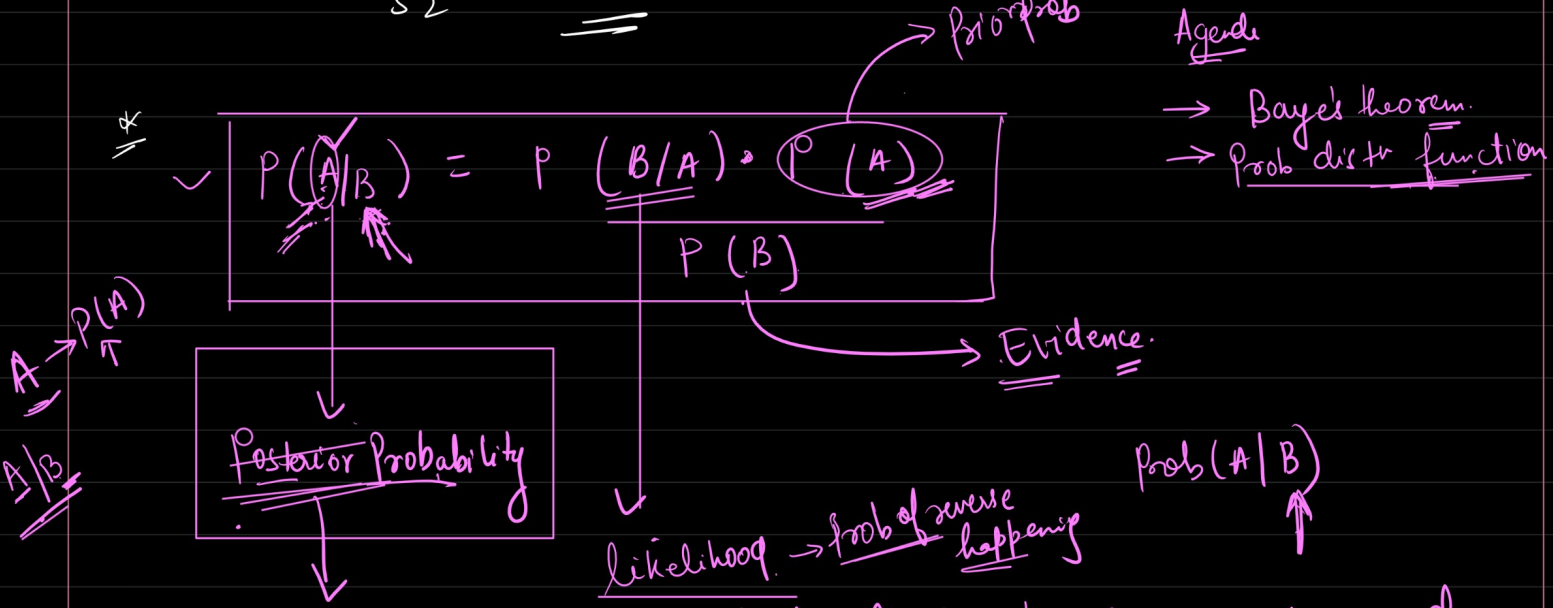
→ $\frac{5+3}{} = \frac{8}{}$ $\frac{5}{8}$

Q 5 green balls, 5 yellow balls 6 blue balls

$\frac{5}{16}$

Q A card is drawn at random from a deck 52 cards. What is prob of drawing a heart?

→ $\frac{13}{52} = 1/4$



What is the updated prob of A if some evidence of event B is there? if Prior Prob of A was P(A)

Q) → 10% of patients in a clinic have liver disease. Five percent of the clinic patients are alcoholics. Among these patients diagnosed with liver disease 7% are alcoholics. You are interested in knowing the prob of patient having liver disease given that he is an alcoholic.

$P(A)$ = Prob of having liver disease = 0.10

$P(B)$ = Prob of alcoholism = 0.05

$P(B/A)$ = 0.07

$P(A/B) = ?$ $= \frac{P(B/A) \cdot P(A)}{P(B)} = \frac{0.07 \times 0.10}{0.05}$

$\Rightarrow 0.14$

14%

you have won the match

$$P(A/B) = \frac{P(B/A) \cdot P(A)}{P(B)}$$

when B has already occurred

↓

you have played the match.

Use Case ©

S - Yes
O - No
R - Yes
S - No
O - Yes
R - No

Outlook	Temperature	Play
Yes		

Sunny
Overcast
Rainy

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* Prob distribution