AI1103 : Assignment 1

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Download all python codes from

https://github.com/vaishnavi−w/AI1103/blob/main/Assignment_1/code_assign1.py

and latex-tikz codes from

https://github.com/vaishnavi−w/AI1103/blob/main/Assignment_1/latex_assign1.tex

1 Misc Problem 6.27

If $P(A) = 6/11, P(B) = 5/11$ and $P(A + B) = 7/11$ find

1) $P(AB)$
2) $P(A|B)$
3) $P(B|A)$

2 Solution

1)

$$P(A + B) = P(A) + P(B) - P(AB) \tag{2.0.1}$$

Substituting the values,

$$\frac{7}{11} = \frac{6}{11} + \frac{5}{11} - P(AB) \tag{2.0.2}$$

$$P(AB) = 1 - \frac{7}{11} = \frac{4}{11} \tag{2.0.3}$$

2)

$$P(A|B) = \frac{P(AB)}{P(B)} = \frac{4/11}{5/11} = \frac{4}{5} \tag{2.0.4}$$

3)

$$P(B|A) = \frac{P(AB)}{P(A)} = \frac{4/11}{6/11} = \frac{2}{3} \tag{2.0.5}$$