

# 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](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](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

- i.  $P(AB)$
- ii.  $P(A|B)$
- iii.  $P(B|A)$

## 2 SOLUTION

i.

$$P(A + B) = P(A) + P(B) - P(AB) \quad (2.0.1)$$

Substituting the values,

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

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

ii.

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

iii.

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