

# AI1103 - Assignment 3

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Download all latex-tikz codes from

<https://github.com/rajasekhar156/assignment-3/blob/main/main.tex>

using these

$$\frac{\Pr(A) - \Pr(AB)}{1 - \Pr(B)} = \frac{\Pr(A\bar{B})}{\Pr(\bar{B})} \quad (0.0.3)$$

$$= \Pr\left(\frac{A}{\bar{B}}\right) \quad (0.0.4)$$

QUESTION:

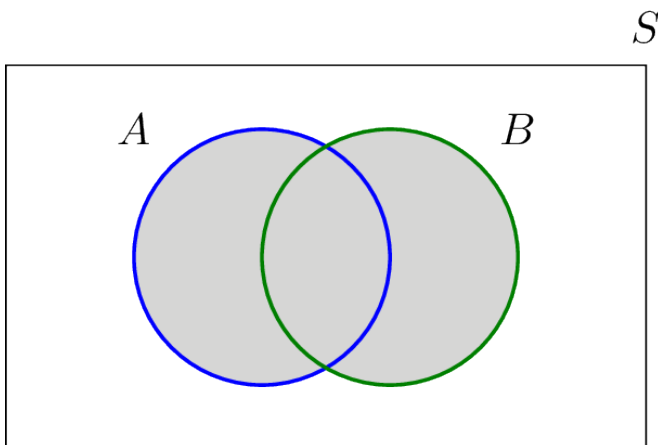
If A and B are two events and the probability  $\Pr(B) \neq 1$ , then  $\frac{\Pr(A) - \Pr(AB)}{1 - \Pr(B)}$  equals

Hence, option (1) is correct.

- 1)  $\Pr\left(\frac{A}{\bar{B}}\right)$
- 2)  $\Pr\left(\frac{A}{B}\right)$
- 3)  $\Pr\left(\frac{\bar{A}}{B}\right)$
- 4)  $\Pr\left(\frac{\bar{A}}{\bar{B}}\right)$

ANSWER:

From the figure



$$S - B = \bar{B} \quad (0.0.1)$$

$$A - (AB) = A\bar{B} \quad (0.0.2)$$

So from these equations we get,

- 1)  $1 - \Pr(B) = \Pr(\bar{B})$
- 2)  $\Pr(A) - \Pr(AB) = \Pr(A\bar{B})$