AI1103 - Assignment 1

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Download all python codes from

https://github.com/vishwahurakadli/AI1103/blob/main/code 1.py

and latex-tikz codes from

https://github.com/vishwahurakadli/AI1103

- 1) Misc Problem 6.25: If Pr(A) = 0.8, Pr(B) = 0.5 and Pr(B/A) = 0.4Evaluate
 - a) Pr(AB)
 - b) Pr(A/B)
 - c) Pr(A + B)
- 2) Solution
 - a) By the definition

$$Pr(B/A) = \frac{Pr(AB)}{Pr(A)}$$
(0.0.1)

Substituting the values,

$$Pr(AB) = \frac{2}{5} \times \frac{4}{5}$$
 (0.0.2)

$$\Pr(AB) = \frac{8}{25} \tag{0.0.3}$$

b) By the definition

$$Pr(A/B) = \frac{Pr(AB)}{Pr(B)}$$
(0.0.4)

Substituting the values,

$$\Pr(A/B) = \frac{\frac{8}{25}}{\frac{1}{2}} \tag{0.0.5}$$

$$\Pr(A/B) = \frac{16}{25} \tag{0.0.6}$$

c) By the result

$$Pr(A + B) = Pr(A) + Pr(B) - Pr(AB)$$
(0.0.7)

Substituting the values,

$$\Pr(A+B) = \frac{4}{5} + \frac{1}{2} - \frac{8}{25} \tag{0.0.8}$$

$$\Pr(A+B) = \frac{98}{100} \tag{0.0.9}$$