Assignment 7

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Abstract—This document contains the solution for Assignment 7(NCERT Class 12 13.2 1)

13.2 1 [NCERT 12] : If $\Pr(A) = \frac{3}{5}$ and $\Pr(B) = \frac{1}{5}$,find $\Pr(A \cap B)$ if A and B are independent events.

Solution:

Denote the random variable $X \in \{0, 1\}$, where $X = 0$ denotes the event A and $X = 1$ denotes the event B.

Then $\Pr(X = 0 \cap X = 1)$ denotes $\Pr(A \cap B)$

Since $X = 0$ and $X = 1$ are independent events

$$\Pr(X = 0 \cap X = 1) = \Pr(X = 0) . \Pr(X = 1) \tag{1}$$

$$\implies \boxed{\Pr(X = 0 \cap X = 1) = \frac{3}{25}} \tag{2}$$