

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

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

$$\Pr(X = 0, X = 1) = \Pr(X = 0) \times \Pr(X = 1) \quad (1)$$

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