

AI1103-Assignment 2

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Download all python codes from

<https://github.com/SHASHANK-1-ALL/AI1103-ASSIGNMENT-2/blob/main/Assignment2.py>

and latex-tikz codes from

<https://github.com/SHASHANK-1-ALL/AI1103-ASSIGNMENT-2/blob/main/Assignment2.tex>

After the first ball is removed (given to be white which means $X=0$), number of white balls reduces to 3 and total number of balls reduces to 6.

Probability that the second removed ball is red when the first removed ball is white is

$$\Pr(Y = 1|X = 0) = \frac{3}{6} = \frac{1}{2} \quad (0.0.1)$$

So,

$$\Pr(Y = 1|X = 0) = 0.5 \quad (0.0.2)$$

\therefore The answer is option (C) $\frac{1}{2}$.

QUESTION

A box contains 4 white balls and 3 red balls. In succession, two balls are randomly selected and removed from the box. Given that the first removed ball is white, the probability that the second removed ball is red is

- (A) $\frac{1}{3}$
- (B) $\frac{3}{7}$
- (C) $\frac{1}{2}$
- (D) $\frac{4}{7}$

SOLUTION

Let $X \in \{0, 1\}$ be the random variable where $X=0$ represents that the first removed ball is white.

Let $Y \in \{0, 1\}$ be the random variable, where $Y=1$ represents that the second removed ball is red.