

# Assignment 2

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Download python code from

<https://github.com/v-samyuktha/AI1103/blob/Assignment-2/Assignment-2.py>

and latex-tikz code from

<https://github.com/v-samyuktha/AI1103/blob/Assignment-2/Assignment-2.tex>

## 1 QUESTION

There are five bags each containing identical sets of ten distinct chocolates. One chocolate is picked from each bag.

The probability that atleast two chocolates are identical is?

## 2 SOLUTION

Let random variable  $X \in \{0, 2, 3, 4, 5\}$  denote the maximum number of identical chocolates picked in an experiment.

$$P(X \geq 2) = 1 - P(X = 0) \quad (2.0.1)$$

$$= 1 - \frac{10 \times 9 \times 8 \times 7 \times 6}{10^5} \quad (2.0.2)$$

$$= 1 - 0.3024 \quad (2.0.3)$$

$$= 0.6976 \quad (2.0.4)$$