Assignment 2

Pradyumn Sharma

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https://github.com/96143/Assignment−2/blob/main/question%201.1.ipynb
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https://github.com/96143/Assignment−2/blob/main/1.1

1 Problem 1.1

A jar contains 24 marbles, some are green and others are blue. If a marble is drawn at random from the jar, the probability that it is green is $\frac{2}{3}$. Find the number of blue marbles in the jar.

2 Solution 1.1

Total number of marbles = 24
Let the total number of green marbles be x.

Then, total number of blue marbles = 24 - x

Probability of getting green marble = P(G)

$$P(G) = \frac{x}{24} = \frac{2}{3} \tag{2.0.1}$$

Solving,
we get x as 16
Therefore,
total number of green marbles in the jar = 16
So,
The number of green marbles =16
The number of blue marbles = 24 - 16 = 8 marbles

3 Problem 1.2

A bag contains lemon flavoured candies only. Malini takes out one candy without looking into the bag. What is the probability that she takes out ?

1) an orange flavoured candy?
2) a lemon flavoured candy?

4 Solution 1.2

1) The bag contains only lemon flavored candies, and nothing else. There are no orange flavored candies in the bag. Hence there is no possibility of taking out an orange candy.
   Therefore,
   The probability of taking out an orange flavored candy = 0

2) The bag only contains lemon flavored candies.
   Therefore,
   No.of favorable outcomes = k
   Total no.of possible outcomes = n
   We know that, Probability of an event E,

$$P(E) = \frac{k}{n} \tag{4.0.1}$$

$$P(E) = 1 \tag{4.0.2}$$

   Therefore, the probability of taking out a lemon flavored candy=1