

Conditions

A bag contains 15 white, 15 black, 10 red balls. 3 balls are drawn in succession. Probability that one of them is black, one of them is white, and another is red is

Solution

The classic definition of probability claims, that the probability of some random event A is equal to a rate of all favorable outcomes for this event to all possible outcomes.

The probability to draw a white ball from a bag with 40 balls is $15/40$.

The probability to draw then a black one – $15/39$

The probability to take a red at the last – $10/38$.

The total probability of taking all these 3 at the same time is:

$$P = \frac{15}{40} \frac{15}{39} \frac{10}{38} = 0,037955465587044534412955465587045$$