

**Answer on Question #76770 – Math – Statistics and Probability
Question**

A Jar contains 8 green, 4 blue, 10 red, and 2 yellow skittles. A skittle is randomly draw, replaced, then another is drawn. What is the probability of getting a red skittle, then a yellow one?

Solution

There are $8 + 4 + 10 + 2 = 24$ skittles. When you sample with replacement, your two items are independent. In other words, one does not affect the outcome of the other. You have 10 out of 24 chance of getting the red skittle in the first drawing and 2 out of 24 chance of getting the yellow skittle in the second drawing. We simply find the product of the probabilities of the event directly

$$P(A \cap B) = P(A)P(B)$$
$$P = \frac{10}{24} \left(\frac{2}{24} \right) = \frac{5}{144}$$

Answer: $\frac{5}{144}$.