

## Answer on Question #59916 – Math – Statistics and Probability

### Question

1. If a coin is tossed three times and the total number of tails are observed, what is the sample space for the experiment?

**Answer:**

$\{(T, T, T), (T, T, H), (T, H, H), (T, H, T), (H, T, T), (H, T, H), (H, H, T), (H, H, H)\}$ .

### Question

2. Relative frequency approach is the same as.....

**Answer:** Relative frequency approach is the same as probability.

### Question

3. A bag contains 2 natural oranges and 3 artificial oranges. Each of four persons, A, B, C, and D, in the order named, draws one orange and does not replace it. The first to draw a natural orange receives N20. What is the probability that A, B, and C lose and D wins.

**Answer:**  $P = \frac{3}{5} \cdot \frac{2}{4} \cdot \frac{1}{3} = \frac{1}{10} = 0.1$ .

### Question

4. If a die is thrown once, what is the probability of getting an even number?

**Answer:**  $P = \frac{3}{6} = \frac{1}{2} = 0.5$ .

### Question

5. 4 different Biology books, 6 different CIT books and 2 different Mathematics books are to be arranged on a shelf. How many different arrangements are possible if only the Biology books must stand together?

### **Solution**

First arrange the Biology books. There are  $4!$  ways to do this. Since they have to stay together - consider the Biology subject now as 1 big "book", 6 CIT books and 2 Math books.

Then we have  $1+6+2=9$  "books" and we can arrange them in  $9!$  ways. So we shall have  $4!9!=8,709,120$  arrangements.

**Answer:**  $4!9!=8,709,120$ .