

Answer on Question #44151, Math, Statistics and Probability

A medical test has a false positive rate of 0.2. If 9 tests are conducted, what is the chance of getting exactly 2 false positive results?

Solution.

Process follows the laws of the binomial distribution.

$$P_n(k) = C_k^n * p^k(1 - p)^{n-k}$$

Where p is the probability of origin favorable events. n is the number of samples. k is the number of origin favorable events.

In this case:

$$P(2) = C_2^9 * 0.2^2(1 - 0.2)^7 = \frac{9!}{7!2!} 0.2^2 0.8^7 \approx 0.3$$