1. The arrival time of the first train is uniformly distributed between 8:00 and 8:02. The interval between trains is 2 min. The passenger comes to the station from 8:00 to 8:05, the time is uniformly distributed over this interval. What’s the probability that the first train will arrive 8:01 or later, the passenger will come before 8:03 and catch the second train?
2. Find expected value and variance of ξ + η, if (ξ, η) is uniformly distributed over the triangle with vertices (0, 0), (0, 1), (1, 0).
3. A perfect die is rolled 100 times. Find the probability that the sum of all points obtained is between 330 and 380.

During the webinar, I’ll discuss geometric approach to the probability of uniformly distributed variables, calculate the expected value and variance of continuous random variables, and also tell a few words about accuracy of the Central Limit Theorem.

 |F_n(x)-Phi(x)-1/2|<(33)/4rho/(sigma^3sqrt(n)), 

|F(x) – Ф(x)| < C \* E|X^3|/(Var(X)^(3/2) \* n^(1/2))

C = 33/4

C = 0.4748