Answer on Question #38427 – Math – Other

The number 25 is selected from 1,2,…,100 with probability 0.01. Thus exact probability that 4 people select 25 is calculated using Binomial distribution with parameters n=500, p=0.01.

Let ξ be a random variable that equals to number of people that selected 25. Then

$$\xi \sim Bi(500,0.01)$$

$$P(\xi = 4) = \binom{500}{4} 0.01^4 (1 - 0.01)^{500-4} = \binom{500}{4} 0.01^4 0.99^{496} = 0.175995$$