R4

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1 Unbiased Estimation

For sampling without replacement, is $\bar{X}^2$ an unbiased estimator for μ^2? If not, what is the bias?

2 joint distribution

Let P have a uniform distribution on $[0,1]$, and, conditional on $P = p$, let X have a Bernoulli distribution with parameter p. Find the conditional distribution of P given X.