(a).





(b).

The mode of the simulated sample is about 0.55, and I am expecting

(b).

> mean(x)

[1] 0.9995091

> var(x)

[1] 0.4972461

I am expecting the mean to be and the variance to be , the relative bias of the simulated sample are 0.0491% and 0.551% separately.