第一次上机作业 12班 卢睿博 201892383

1.a

> a<-rnorm(1000,0,1)

> a

[1] -0.454861420 -2.108232430 -0.492637038 -1.160397135 0.027399261

[6] -2.277158851 -1.003225977 -1.823111438 -1.386214956 0.354895630

[11] -0.720128258 0.352927015 -0.824548160 -0.650572423 0.369593424

[16] -0.520631953 0.809302248 -2.238899352 0.639505624 0.905908567

[21] -0.824461639 -0.506455142 -0.671502163 -0.880297664 0.067177856

[26] -1.587212549 0.672547108 0.775366863 -0.630218204 0.492946492

[31] 0.542529327 0.900352218 0.528813762 0.502912001 -0.826563044

[36] 1.185437867 -0.811702941 -0.243506237 0.635434328 0.673359231

[41] -1.502112187 -0.231257712 -1.354481919 0.419915613 0.609199867

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[76] -0.687414339 0.254449202 0.624842374 -0.441113343 1.697529660

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[996] 1.848431619 1.836157909 -0.524014491 -1.275433127 -1.097889015

> Mean\_a = mean(a)

> Mean\_a

[1] 0.004185372

> Var\_a = var(a)

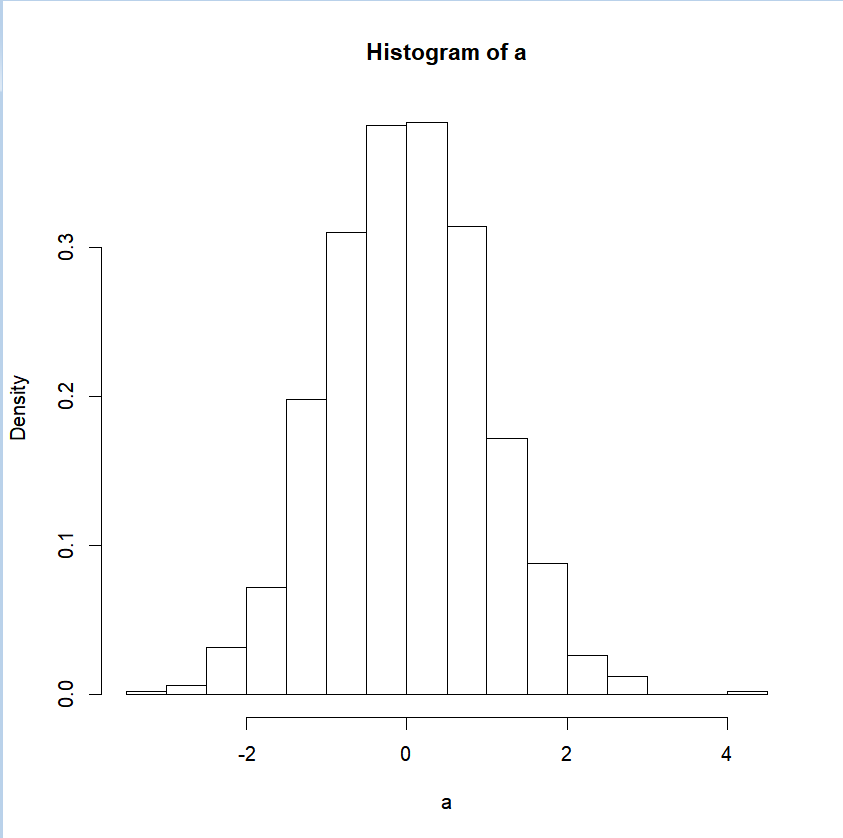
> Var\_a

[1] 0.964178

> ?hist

starting httpd help server ... done

> hist(a,freq=F)



2.a

> b<-c(rpois(100,lambda=2))

> b

[1] 1 1 2 5 1 0 2 2 3 3 2 2 2 5 1 0 1 0 2 4 2 2 5 1 2 1 2 2 1 2 0 2 0 2 6 1

[37] 1 1 1 1 2 0 4 3 2 1 2 2 1 1 2 3 0 0 2 1 1 4 2 2 2 3 1 3 1 1 2 2 1 1 3 2

[73] 4 2 4 1 2 2 1 2 5 0 1 3 5 3 2 3 2 2 3 1 1 1 3 1 1 0 2 0

> Mean\_b = mean(b)

> Mean\_b

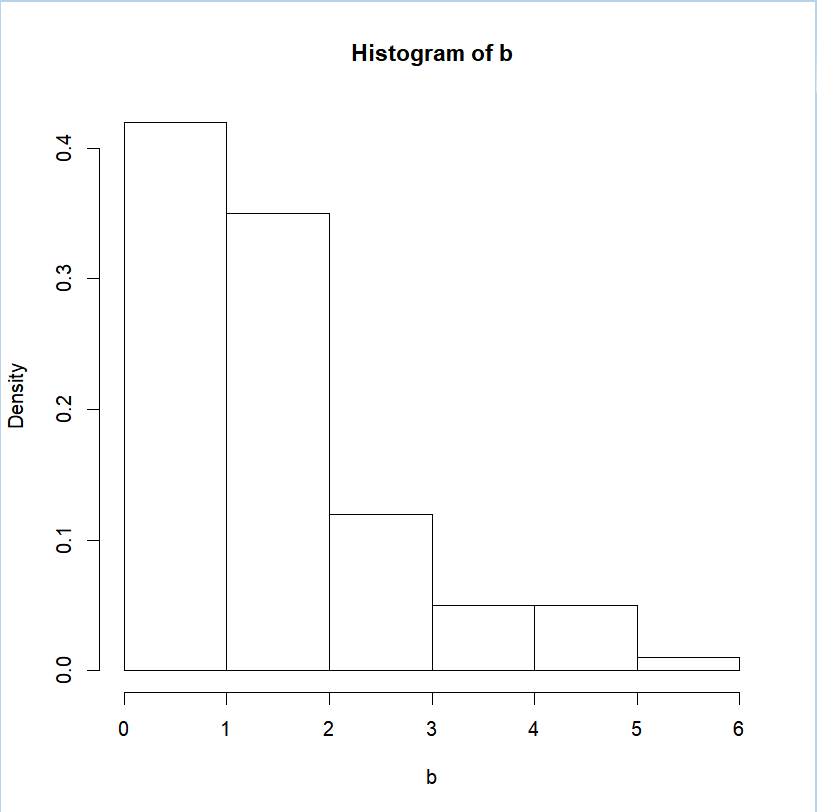
[1] 1.88

> Var\_b = var(b)

> Var\_b

[1] 1.682424

> hist(b,freq=F)



# 2.b

> y<-c(1:1000)

> for ( i in 1:1000){

+ x<-c(rpois(100,lambda = 2))

+ y[i] = mean(x)}

> Mean\_y = mean(y)

> Mean\_y

[1] 2.00349

> y

[1] 2.21 2.17 2.12 2.18 1.99 2.03 1.95 2.06 1.88 1.99 2.03 2.03 1.89 1.96

[15] 1.98 2.09 1.90 2.09 2.34 2.12 2.03 1.91 2.05 2.08 1.79 1.62 1.65 2.12

[29] 1.76 1.88 2.03 1.89 2.00 1.68 2.21 2.12 2.11 2.18 1.97 1.94 1.96 1.96

[43] 1.98 2.32 1.94 1.98 1.93 2.07 2.20 2.01 1.90 2.30 2.02 2.21 1.95 2.01

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[897] 2.12 1.93 2.11 1.86 2.05 1.86 2.08 1.95 1.83 2.10 1.91 2.09 2.08 1.77

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[967] 1.80 1.83 2.11 2.16 2.25 2.12 2.05 1.81 2.12 2.22 1.93 2.22 2.19 1.92

[981] 2.22 1.84 2.01 1.99 1.83 2.05 1.98 1.82 1.86 1.82 1.73 2.07 2.04 1.97

[995] 1.83 2.20 2.12 2.07 2.07 2.04

**2.c**

> sy<-c(1:1000)

> for(i in 1:1000){

+ sy[i] = (y[i]-2)/sqrt(2/100)}

> sy

[1] 1.48492424 1.20208153 0.84852814 1.27279221 -0.07071068

[6] 0.21213203 -0.35355339 0.42426407 -0.84852814 -0.07071068

[11] 0.21213203 0.21213203 -0.77781746 -0.28284271 -0.14142136

[16] 0.63639610 -0.70710678 0.63639610 2.40416306 0.84852814

[21] 0.21213203 -0.63639610 0.35355339 0.56568542 -1.48492424

[26] -2.68700577 -2.47487373 0.84852814 -1.69705627 -0.84852814

[31] 0.21213203 -0.77781746 0.00000000 -2.26274170 1.48492424

[36] 0.84852814 0.77781746 1.27279221 -0.21213203 -0.42426407

[41] -0.28284271 -0.28284271 -0.14142136 2.26274170 -0.42426407

[46] -0.14142136 -0.49497475 0.49497475 1.41421356 0.07071068

[51] -0.70710678 2.12132034 0.14142136 1.48492424 -0.35355339

[56] 0.07071068 -0.70710678 -0.49497475 -1.34350288 0.84852814

[61] -0.70710678 -0.77781746 -0.91923882 -0.98994949 1.20208153

[66] 0.98994949 -0.07071068 -1.13137085 1.20208153 -1.34350288

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[971] 1.76776695 0.84852814 0.35355339 -1.34350288 0.84852814

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[986] 0.35355339 -0.14142136 -1.27279221 -0.98994949 -1.27279221

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> Mean\_sy = mean(sy)

> Mean\_sy

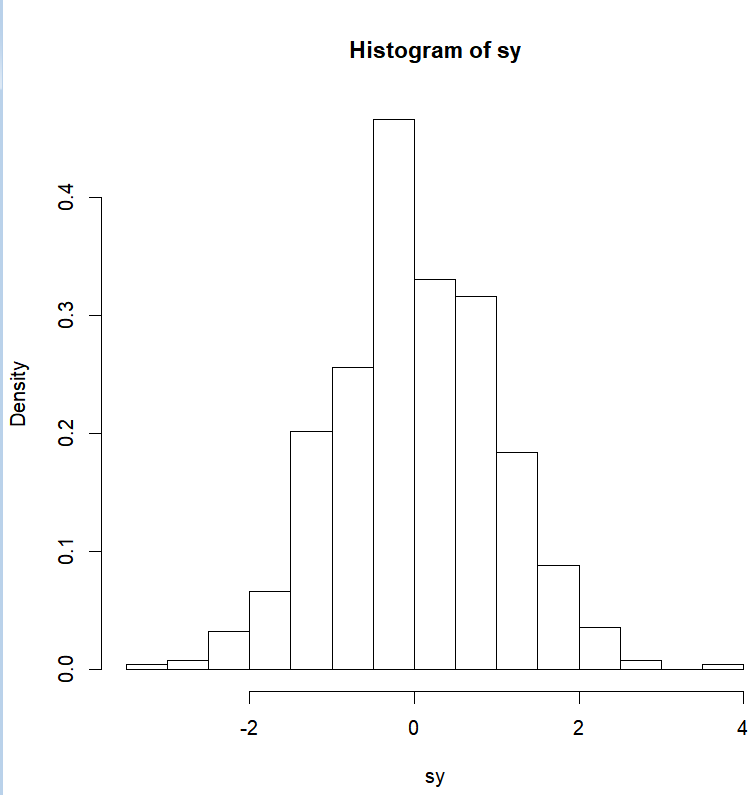
[1] 0.02467803

> Var\_sy = var(sy)

> Var\_sy

[1] 1.029005

> hist(sy,freq=F)



经比较可得，sy属于均值为0方差为1的正态分布.