```
% 3.8

for k = 10.^[2,4,6]
x = rand(1,k);
y = rand(1,k);

z = exp((x+y).^2);

res = mean (z);
sd = 2*std(z)/sqrt(k);

fprintf("k= %d, res= %f, sd= %f\n ", k, res, sd);
end

k= 100, res= 5.621596, sd= 1.321125
 k= 10000, res= 4.872142, sd= 0.114684
 k= 1000000, res= 4.902062, sd= 0.011934

%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
%3.9

%u1 = exp(-x);
%u2 = exp(-y);

%x= -log(u1);
%y= -log(u2);


%dx= -(1/u1)du1;
%dy= -(1/u2)du2;

%  Y<X => U1<U2

u1 = rand(1,k);
u2 = rand(1,k);

z = zeros(1,length(y));

z(index) = (u1(index)+u2(index))./u1(index)./u2(index);

res = mean(z);
sd = 2*std(z)/sqrt(k);

fprintf("k= %d, res= %f, sd= %f\n ", k, res, sd);

k= 1000000, res= 25.259165, sd= 17.680621

%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%

3.12


for repeat= 10.^[2,3,4]
Ns=zeros(1,repeat);

for iter = 1:repeat
for k= 1:100
x= rand(1,k);
s= sum(x);
if s>1
Ns(iter)= k;

break;
end;
end;
end;
fprintf("%d, %f \n", repeat, mean(Ns));
```