%1a

function correlation()

x=[70,92,80,74,65,83];

y=[74,84,63,87,78,90];

xm=sum(x)/6;

ym=sum(y)/6;

for i= 1:6

r+=(xm-x(i))\*(ym-y(i))/sqrt(power(xm-x(i),2))\*sqrt(power(ym-y(i),2));

endfor

printf("%d",r);

end

correlation()

%1b

k=1;

s=0;

for i=1:2:201

if(mod(k,2)==0)

s+=-1\*power(i,5);

k+=1;

else

s+=1\*power(i,3);

k+=1;

end

endfor

printf("the sum is:%d",s);

%2a

x=[0:1:9]

y=[0:0.1:0.6]

x1=(e.^((-1/2).\*((x-4.5).^2)))/(sqrt(2.\*pi))

plot(x,x1,'--go',...

'LineWidth',2,...

'MarkerSize',10,...

'MarkerEdgeColor','r',....

'MarkerFaceColor','r')

x2=0.5.\*e.^(-0.5\*x)

plot(x,x2)

x3=0.4

plot(x,x3)

hold on

legend('Normal','Exponential','Uniform')

hold off

axis([0 9 0 0.6])

xlabel('x')

ylabel('f(x)')

title('Probability Density Functions')

%2b

x=[0:1:9]

y=[0:0.1:0.6]

x1=(e.^((-1/2).\*((x-4.5).^2)))/(sqrt(2.\*pi))

hold on

plot(x,x1,'--go',...

'LineWidth',2,...

'MarkerSize',10,...

'MarkerEdgeColor','r',....

'MarkerFaceColor','r')

hold off

x2=0.5.\*e.^(-0.5\*x)

hold on

plot(x,x2)

hold off

x3=0.4

plot(x,x3)

hold on

legend('Normal','Exponential','Uniform')

hold off

axis([0 9 0 0.6])

xlabel('x')

ylabel('f(x)')

title('Probability Density Functions')