```
potential =

    0.5789    1.0514    0.9745    0.7207    0.6609


M =

    0.7973

a =

    0.0477    0.0646    0.0314    0.0059    0.0186

b =

   -0.0555    0.0450   -0.0136    0.0105

den =

    0.1682

num =

   -0.0136
```

Potential	0.5789	1.0514	0.9745	0.7207	0.6609
Mean	0.79728	0.79728	0.79728	0.79728	0.79728
a	0.04768982	0.06457697	0.03140693	0.0058645	0.0185995
Denominator	0.16813773				
b	-0.0554947	0.04503515	-0.0135715	0.01044398	
Numerator	-0.0135871				
Correlation	-0.0808094				

```
t(1)=0;                     %Initial time
dt=pi/50;
potential(1)=rand;          %Initial random potential
i=1;                        %Lag number

    for k=2:1:5
        potential(k)=potential(k-1)+(sqrt(dt))*(randn);   %Calculates potential
        t(k)=t(k-1)+dt;                                   %Time increment
    end

 M=mean(potential)

    for k=1:1:5
        a(k)=(potential(k)-M)^2;
    end

    for k=1:1:5-i
        b(k)=(potential(k)-M)*(potential(k+i)-M);
    end

 den=sum(a);                                              %Calculates the denominator of the autocorrelation function
 num=sum(b);

 autocorrelation=num/den;
```