BROWNPATH[T\_,n\_]:=Module[{t,U,R,k,B,t},

 t=T/n;

 B[0]=0;

 t0=0;

 Do[

 tk=k\*t;

 U=RandomVariate[NormalDistribution[0,1],1];

 B[tk]=B[tk-1]+Sqrt[t]\*U,

 {k,1,n}];

 R=Table[B[tk],{k,0,n}]//Flatten;R]

BROWNMONTECARLO[t\_,T\_,n\_]:=Module[{S,t,k},

 t=T/n;

 S=BROWNPATH[T,n];

 t0=0;

 Do[

 tk=k\*t;

 If[tk-1 ttk,U=S[[k]]+(t-tk-1)/(tk-tk-1)\*(S[[k+1]]-S[[k]]);Break[]],

 {k,1,n}];U]

BROWN[t\_,n\_]:=Module[{t,apo},

 t=t/n;

 Do[If[RandomInteger[{0,1}]0,Xi=N[Sqrt[t]],Xi=-N[Sqrt[t]]],{i,1,n}];

 apo=Sum[Xi,{i,1,n}]]

BROWNPATHWALK[t\_,n\_]:=Module[{t,apo,oles,X},

 t=t/n;

 X0=0;

 Do[If[RandomInteger[{0,1}]0,Xi=N[Sqrt[t]],Xi=-N[Sqrt[t]]],{i,1,n}];

 oles=Table[Sum[Xk,{k,0,j}],{j,0,n}];

 oles]

BROWNMONTECARLO[3.85,5,1000]

BROWN[3.85,1000]

gr1=ListPlot[BROWNPATH[5,2000],JoinedTrue, PlotStyleRed];

gr2=ListPlot[BROWNPATHWALK[5,2000],JoinedTrue];

Show[gr1,gr2,PlotRange{{0,2000},{-5,5}}]

1.11487

0.124097

