t=Table[Normal[Series[Cos [x],{x,0,i}]],{i,1,13,2}];

PrependTo[t,Cos [x]];

Plot[Evaluate[t],{x,-Pi,Pi}]

tt[x0\_,n\_]:=Normal[Series[Cos[x],{x,x0,n}]];

gs0=tt[0,6];gs3=tt[3,6];gs6=tt[6,6];

Plot[{Cos[x],gs0,gs3,gs6};{x,-3Pi,3Pi},

PlotRange{-2,2},

PlotStyle{{RGBColor[0,0,1],Thickness[0.0074]},

{RGBColor[1,0,1],Thickness[0.0074]},

{RGBColor[1,0,0],Thickness[0.0074]},

{RGBColor[0,1,0],Thickness[0.0074]}}]

f[x\_]:=Sin[x^2];

a=0;b=Pi/2;m2=N[f''[2]];dalta=10^(-4);n0=200;

t[n\_]:=(b-a)/n\*((f[a]+f[b])/2+Sum[f[a+i×(b-a)/n],{i,1,n-1}]);

Do[Print[n," ",N[t[n]]];

If[(b-a)^3/(12n^2)\*m2<dalta,Break[],If[nn0,Print["fail"]]],{n,n0}]

f[x\_]:=Sin[x^2];

a=0;b=Pi/2;m4=D[f[x],{x,4}]/.xPi/2;dalta=10^(-4);k0=100;

p[k\_]:=(b-a)/(6k)\*(f[a]+f[b]+2Sum[f[a+i\*(b-a)/(2k)],{i,2,2k-2,2}]+4Sum[f[a+i\*(b-a)/(2k)],{i,1,2k-1,2}]);

Do[Print[k," ",N[p[k]]];

If[((b-a)^5/(180\*(2k)^4))\*m4<dalta,Break[],If[kk0,Print["fail"]]],{k,k0}]