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COURSE: B.Sc(hons.)Physics

ROLL NO.: 81

**SOURCE CODE:**

clc;

clear;

clf;

n= input("no. of subpoints=")

h=%pi/2/n

A= -(2-(h^2))\*eye(n+1,n+1)

A(1,1)=1

A(n+1,n+1)=1

for i=1:n-1

A(i+1,i)=1

A(i+1,i+2)=1

end

b=(h^2)\*ones(n+1,1)

b(1,1)=1

b(n+1,1)=0

x=linspace(0,%pi/2,n+1)

y=A\b

plot2d(x,y,1)

title('Finite difference method','fontsize',5)

xlabel("x","fontsize",2)

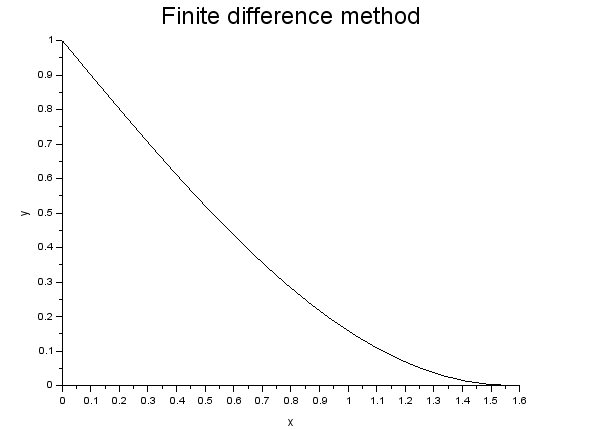
ylabel("y","fontsize",2)

a=gca()

a.x\_location="origin"

a.y\_location="origin"

**OUTPUT:**

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