l=1.0;

n=10;

u=l/n;

v=1;

r=0.001;

e=8.85\*10^(-12)

for i=1:n

y(i)=(((2\*i)-1)\*u)/2

end

a=ones(n,1);

for i=1:n

for j=1:n

if(i==j)

b(i,j)=2\*log(u/r)

else

b(i,j)=u/abs((y(i)-y(j)))

end

end

end

b1=inv(b)

a1=(4\*pi\*e\*v)\*a

c=b1\*a1

plot(y,c)

xlabel('Length in metres')

ylabel('Charge density in v/m')

title('Line Charge Density using Moment Method')