clc

clear all

syms x

a=input('Enter the value of a: ');

b=input('Enter the value of b: ');

fa=input('Enter the value of f(a): ');

fb=input('Enter the value of f(b): ');

p=input('Enter coeficient of y2: ');

q=input('Enter coeficient of y1: ');

r=input('Enter coeficient of y: ');

f=input('Enter the function f(x): ');

h=input('Enter the value of h: ');

n=(b-a)/h;

X1=linspace(a,b,n+1);

X=(-2\*p/h^2 + q/h + r)\*eye(n-1);

for i=1:n-2

X(i,i+1)= p/h^2 - q/h ;

X(i+1,i)= p/h^2;

end

Y=ones(n-1,1);

Y(1,1)=subs(f,x,X1(2))-fa\*(p/h^2-q/h);

Y(n-1,1)=subs(f,x,X1(n))-fb\*p/h^2;

for i=3:length(X1)-2

Y(i-1,1)=subs(f,x,X1(i));

end

Z=inv(X)\*Y;

disp(X)

disp(Y)

disp(Z)