**ARYAMAN MISHRA**

**19BCE1027**

clear all

syms x c\_0 c\_1 c\_2 c\_3 c\_4 c\_5 c\_6

p1x=input('Coefficient of D2y :')

p2x=input('Coefficient of Dy :')

p3x=input('Coefficient of y :')

c=[c\_0, c\_1, c\_2, c\_3, c\_4, c\_5, c\_6]

y=sum(c.\*(x).^(0:6))

dy=diff(y)

d2y=diff(dy)

ode=p1x\*d2y+p2x\*dy+p3x\*y %substitution has been done automatically

ps=collect(ode,x)

d=coeffs(ps,x)

[c\_2,c\_3,c\_4,c\_5,c\_6]=solve(d(1),d(2),d(3),d(4),d(5),{c\_2,c\_3,c\_4,c\_5,c\_6})

z=subs(y)

disp('The general solution of the given ode around x=0 is given by:')

disp(z)

i1=input('Enter y(0) :')

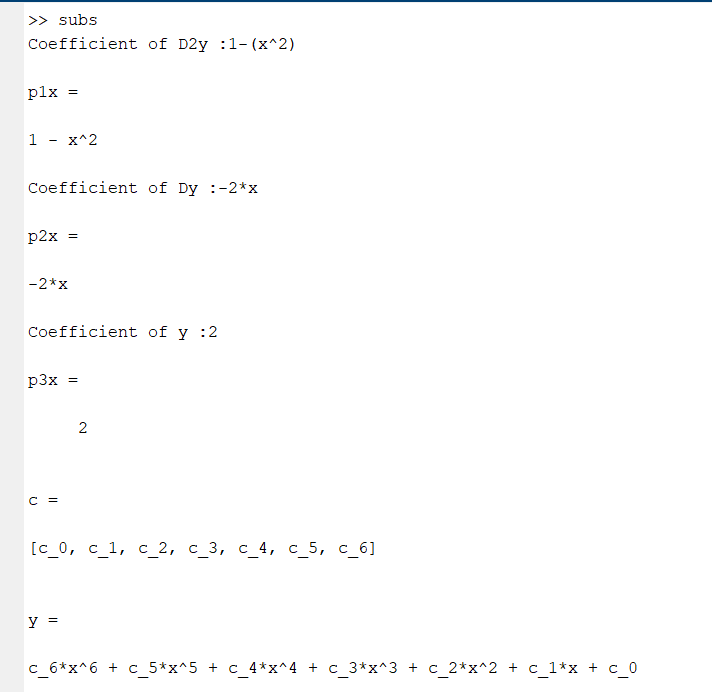
i2=input('Enter Dy(0):')

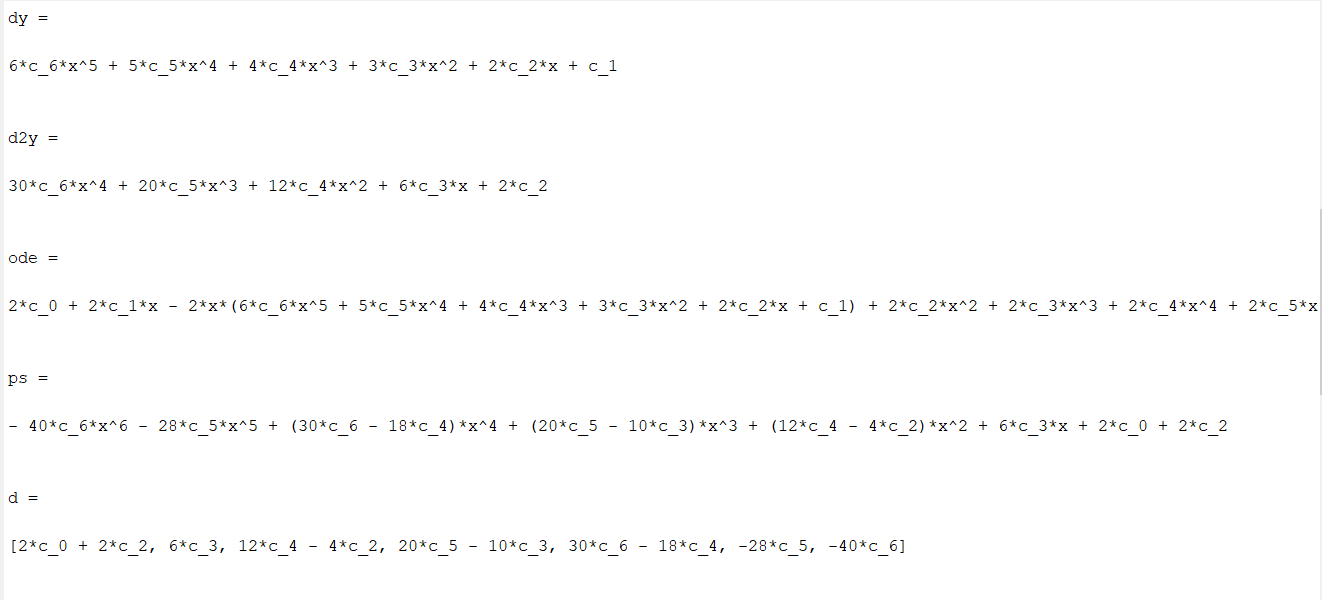
zz=subs(z,[c\_0,c\_1],[i1,i2])

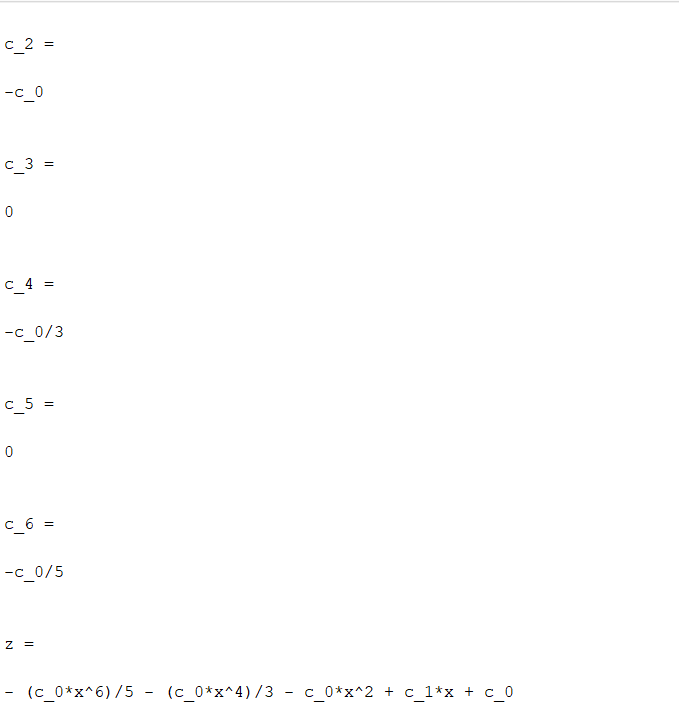
disp(' The Particular solution of the given ode around x=0 is given by:')

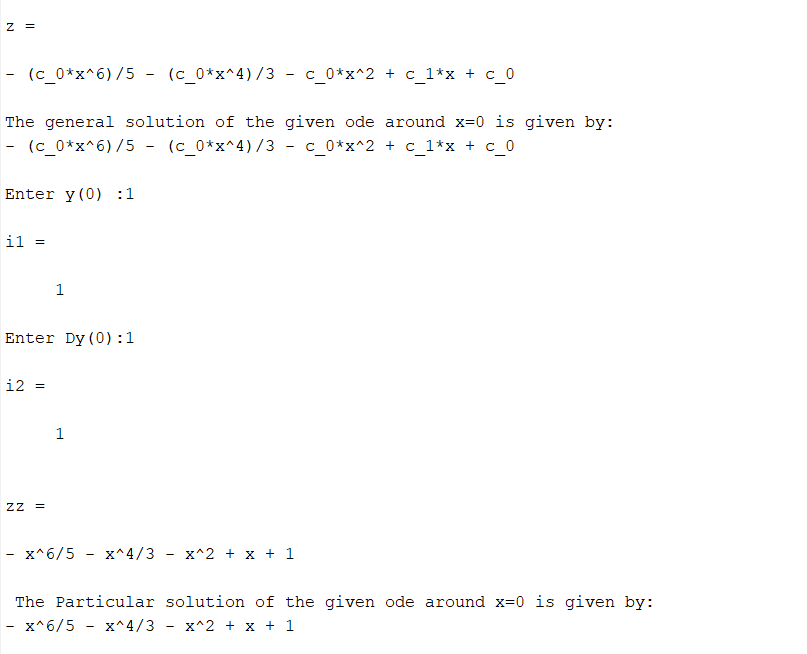
disp(zz)

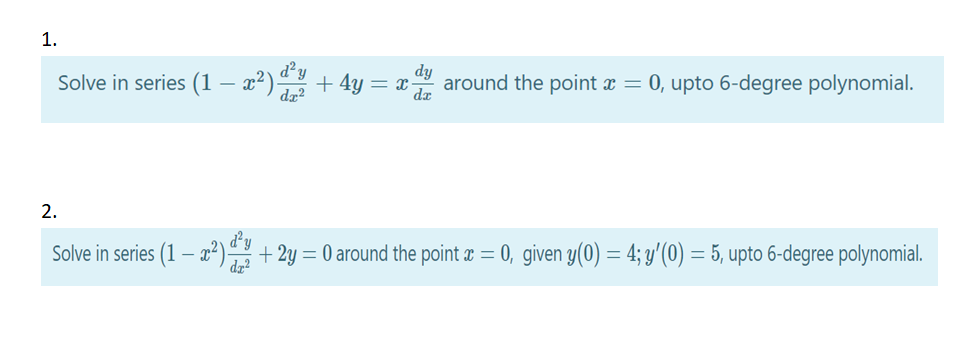
ezplot(zz,[-4 4])

1. 

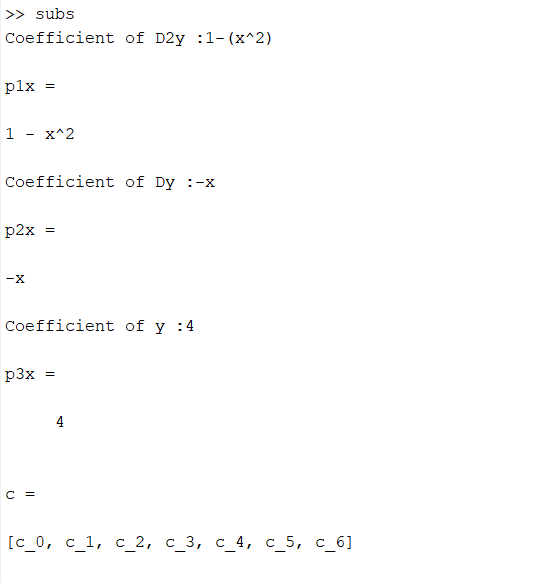


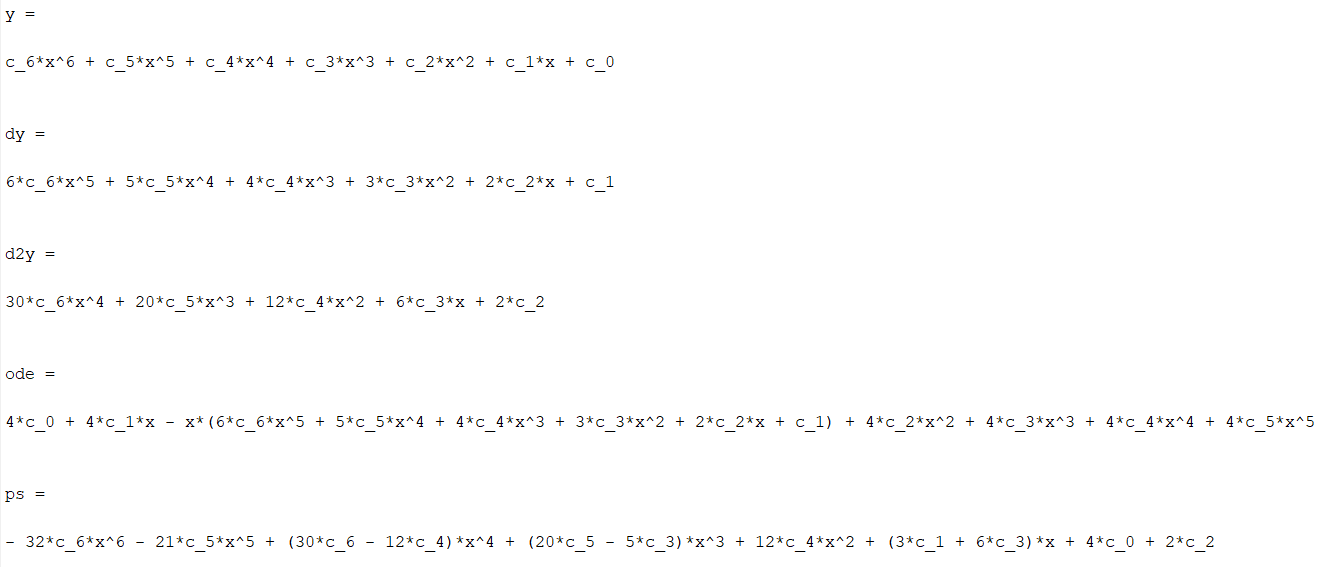


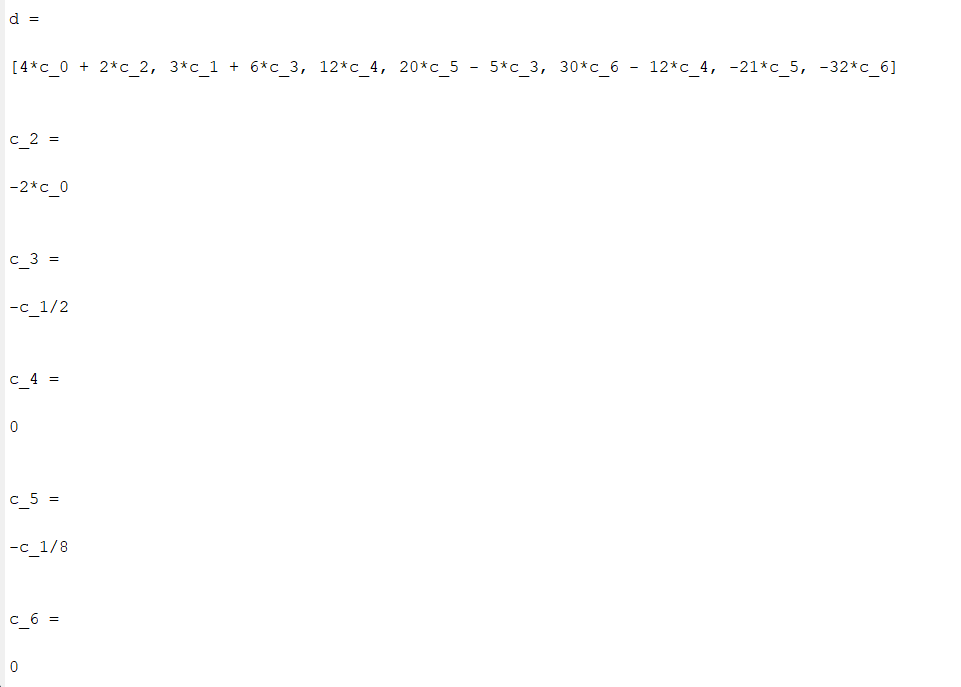


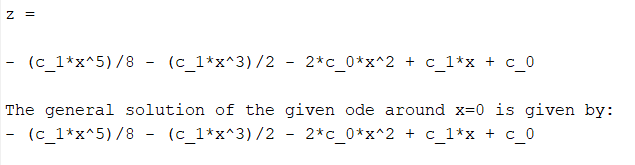


1)









2)

