t = linspace(0,2\*pi,500);

x = cos(t);

y = sin(t);

z = sin(5\*t);

comet3(x,y,z);

plot3(x,y,z);

xlabel('x-axis');

ylabel('y-axis');

zlabel('z-axis');

title('3D Curve');

syms t

ezplot3(cos(t),sin(t),t,[0,6\*pi])

[x,y] = meshgrid(-2:.2:2);

g = x.\*exp(-x.^2 - y.^2);

surf(x, y , g)

x = -1:.05:1;

y = -1:.05:1;

[x,y]=meshgrid(x,y);

z = x.\*y.^2 - x.^3;

surf(x,y,z);

colormap spring

shading interp

syms x y

f = 2\*(x^2 + y^2);

ezsurf(f)

colormap cool

syms x y z

n = 50;

[x y z] = sphere(n);

sphere (n)

% Taylor Series for a two variable function

clc

clearvars

close all

syms x y

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

I = input('Enter the point [a,b] at which Taylor Series is sought: ');

a = I(1); b = I(2);

n = input('Enter the order of series: ');

tayser = taylor(f, [x,y], [a,b], 'order', n);

subplot(1,2,1);

ezsurf(f);

subplot(1,2,2);

ezsurf(tayser);

Enter the function f(x,y): exp(x)\*log(1+y)

Enter the point [a,b] at which Taylor Series is sought: [0,0]

Enter the order of series: 4

Enter the function f(x,y): exp(x\*y)

Enter the point [a,b] at which Taylor Series is sought: [1,1]

Enter the order of series: 5

syms x y

f = exp(x) + exp(y);

ezsurf(f)

colormap spring

syms t

ezplot3(t,t.^2,t.^3,[0,100]);

x = -1:.05:1;

y = -1:.05:1;

[x,y] = meshgrid(x,y);

z = x\*(x.^2 + y.^2);

surf(x, y, z);

colormap cool

shading interp