**Experiment 1: Plotting of curves and surfaces**

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1. Draw a circle with centre (1, 3)

Code:

clc

clear all

x = 1

y = 3

t = linspace(0,2\*pi,100)

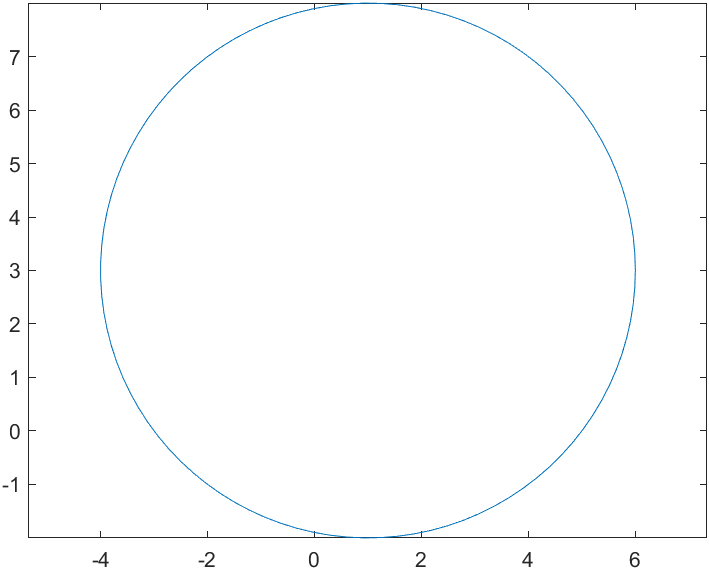
x\_axis = 5\*cos(t) + x

y\_axis = 5\*sin(t) + y

plot(x\_axis, y\_axis)

axis equal

Figure:



2. Draw the graph by using without hold on function

Code:

clc

clear all

x = 1

y = 3

t = linspace(0,2\*pi,100)

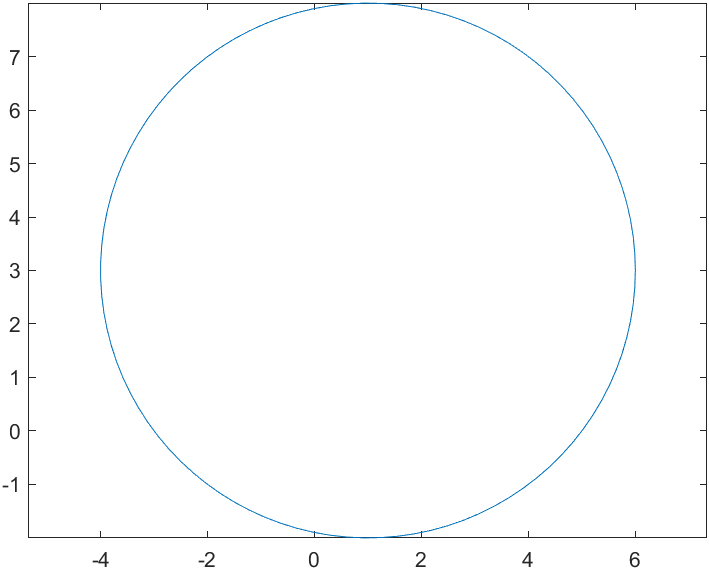
x\_axis = 5\*cos(t) + x

y\_axis = 5\*sin(t) + y

plot(x\_axis, y\_axis)

axis equal

Figure:



3. Draw a surface by using plot3.

Code:

clc

clear all

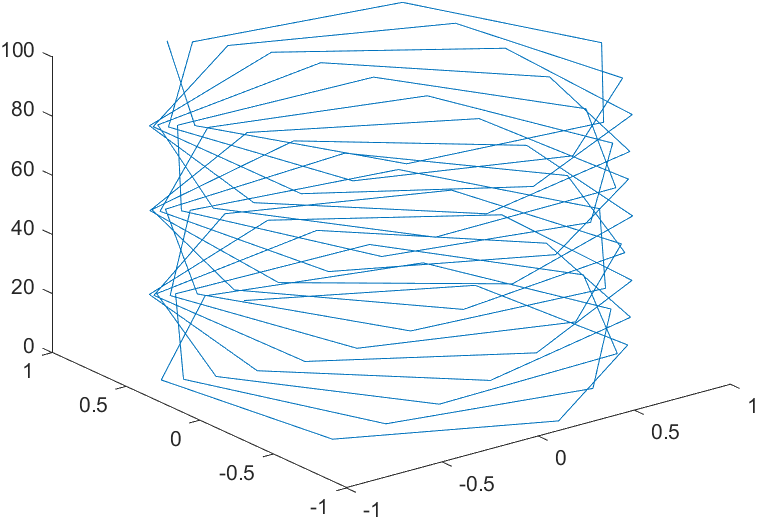
a = linspace(0,100,100)

x = sin(a)

y = cos(a)

plot3(x,y,a)

Figure:



4. Draw the four curves sin 2x, cos x, e-2x, sin 3x in one window.

Code:

clc

clear all

x = linspace(0,2\*pi,100)

a = sin(2\*x)

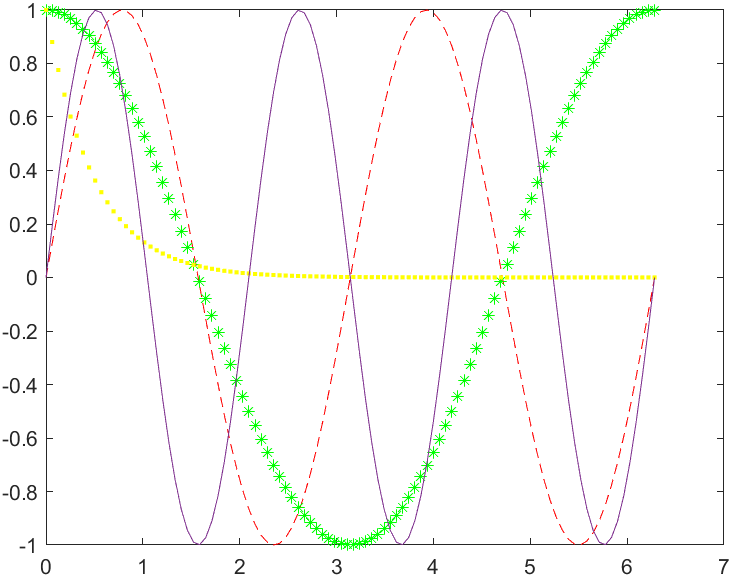
b = cos(x)

c = exp(-2\*x)

d = sin(3\*x)

plot(x,a,'r--',x,b,'g\*',x,c,'y.',x,d)

Figure:



5. Draw a surface using ezplot and ezsurf.

Code:

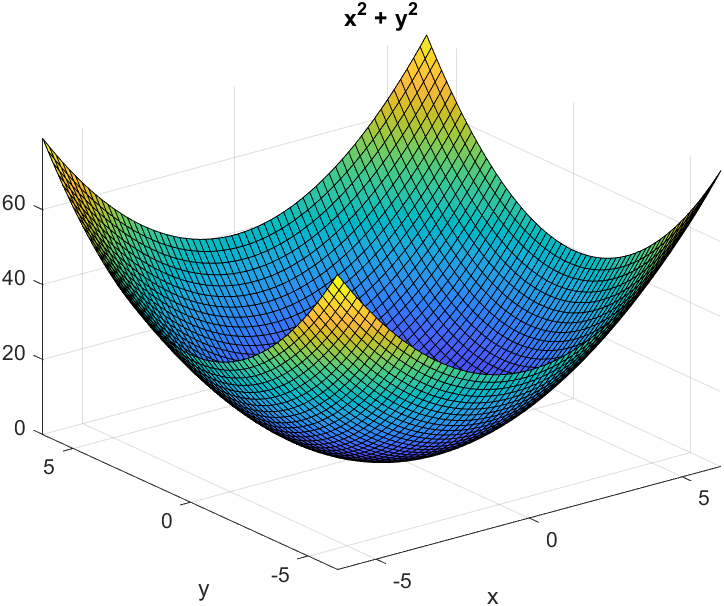
clc

clear all

syms x y

ezsurf(x^2 + y^2)

Figure:



Code:

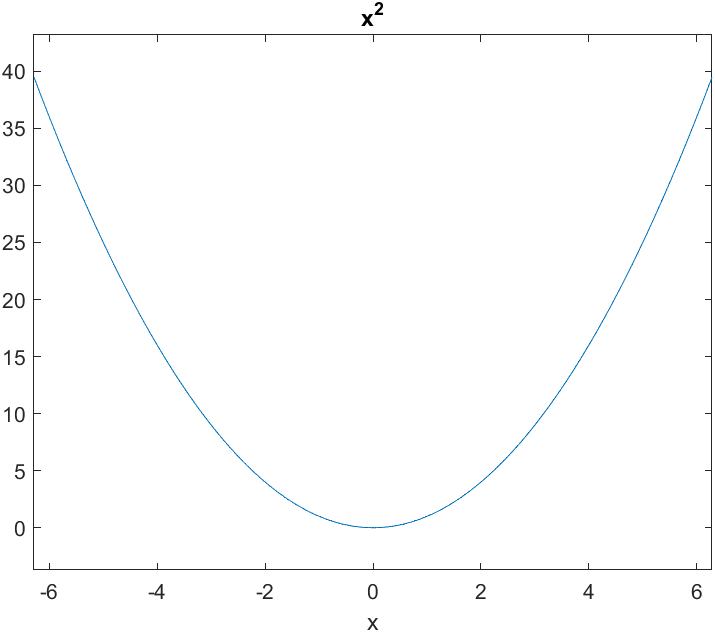
clc

clear all

syms x y

ezplot(x^2)

Figure:



6. Draw the ezplot for the function .

Code:

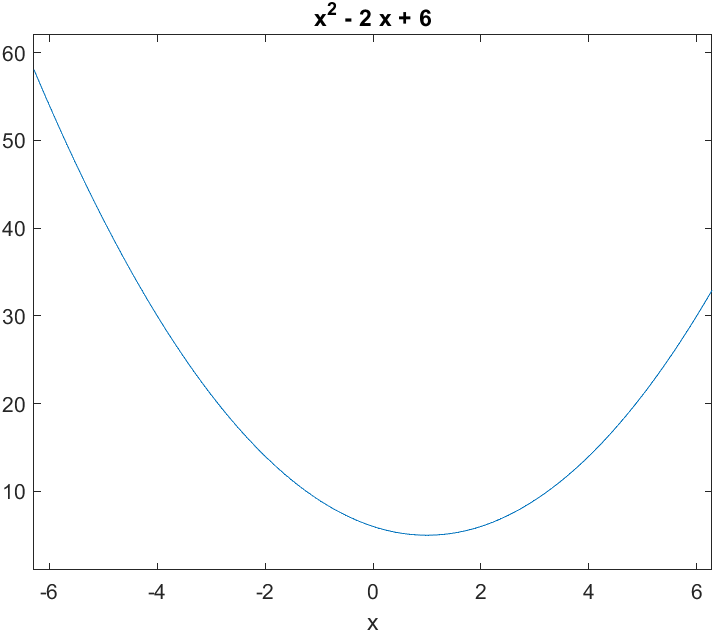
clc

clear all

syms x y

ezplot(x^2 - 2\*x +6)

Figure:



7. Find the equation of the tangent to the curve at

Code:

clc

clear all

clear fig

syms x y

f=4-x^2

fx=diff(f,x)

slope=subs(fx,-1)

y=3+slope\*(x+1)

sprintf('The equation of tangent is',y)

disp(y)

Output:

ans =

'The equation of tangent is'

2\*x + 5

8. Find the equation of the tangent to the curve at

Code:

clc

clear all

clear fig

syms x y

f=2\*(x)^0.5

fx=diff(f,x)

slope=subs(fx,1)

y=2+slope\*(x+1)

sprintf('The equation of tangent is',y)

disp(y)

Output:

ans =

'The equation of tangent is'

x + 3

9. Find the equation of the tangent to the curve at

Code:

clc

clear all

clear fig

syms x y

f=x^3

fx=diff(f,x)

slope=subs(fx,-2)

y=-8+slope\*(x+1)

sprintf('The equation of tangent is',y)

disp(y)

Output:

ans =

'The equation of tangent is'

12\*x + 4