```
%HW-1:Graph plot for a particular equation

clf
t=1:0.01:100
```

```
t = 1×9901
    1.0000    1.0100    1.0200    1.0300    1.0400    1.0500    1.0600    1.0700 ···
```

```
phi=1.618
```

```
phi = 1.6180
```

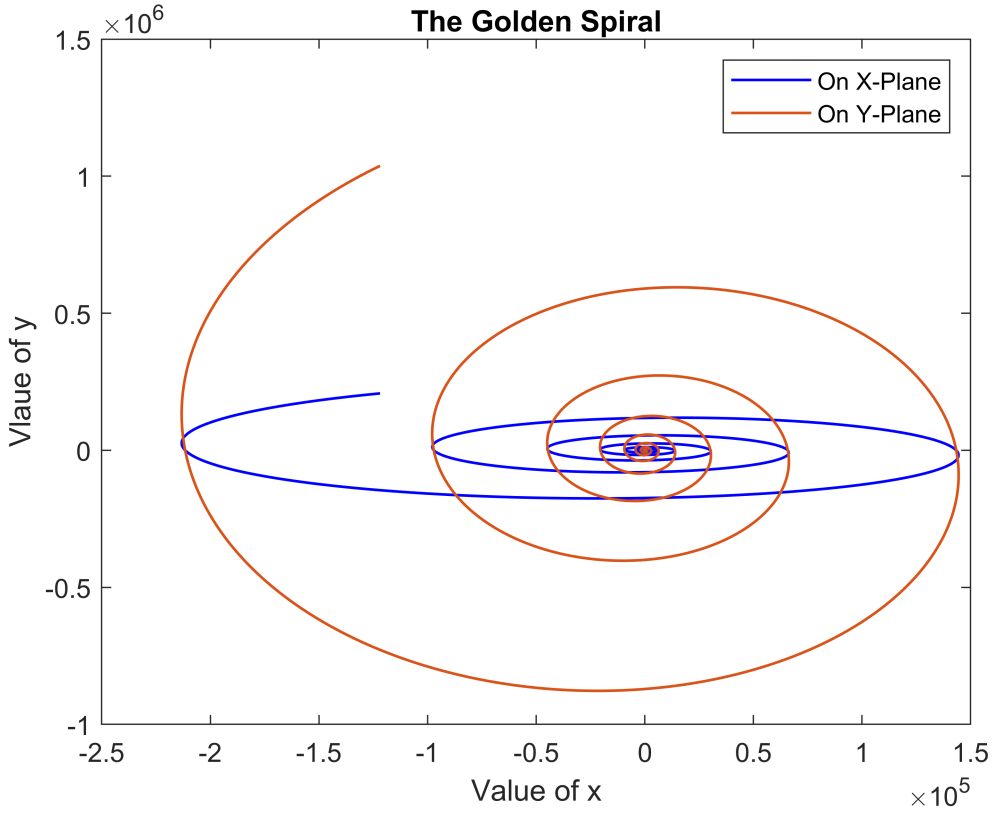
```
x=sin(t).*phi.^((phi*t)./(2*pi))
```

```
x = 1×9901
10^5 ×
    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000 ···
```

```
y=cos(t).*phi.^((phi*t)./(2*pi))
```

```
y = 1×9901
10^5 ×
    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000    0.0000 ···
```

```
plot(x,y,'b','LineWidth',1)
hold on
plot(x,y*5,"LineWidth",1)
title('The Golden Spiral')
xlabel('Value of x')
ylabel('Vlaue of y')
legend('On X-Plane','On Y-Plane')
```




```
% HW-2:graph on data from lab experiment

ld=[0.1 0.1 0.1 0.1 0.7 1.4 1.7 2.8 4.4 5.9 7.9 10.1 12.5 15.1 17.8 18.6 18.6 18.7 18.8 19.4 20
```

```
ld = 1×22
    0.1000    0.1000    0.1000    0.1000    0.7000    1.4000    1.7000    2.8000 ···
```

```
% ld defines the amount of load in kN
a=0.000030975
```

```
a = 3.0975e-05
```

```
% a refers to the cross-sectional area in m^2
e=0.2:0.2:4.4
```

```
e = 1×22
    0.2000    0.4000    0.6000    0.8000    1.0000    1.2000    1.4000    1.6000 ···
```

```
% e is the elongation of the mild steel specimen(mm)
l=46.6
```

```
l = 46.6000
```

```
% l is the length of the mild steel specimen(mm)

Strain=e./l
```

```
Strain = 1×22
    0.0043    0.0086    0.0129    0.0172    0.0215    0.0258    0.0300    0.0343 ···
```

```
Stress=ld./a
```

```
Stress = 1×22
10^5  ×
    0.0323    0.0323    0.0323    0.0323    0.2260    0.4520    0.5488    0.9040 ···
```

```
plot(Stress,Strain,'-o',"LineWidth",1.5,'MarkerFaceColor','r',"MarkerEdgeColor",'k',"MarkerSize

title('Stress vs Strain Graph')
xlabel('Stress,\sigma(kPa)')
ylabel('Strain,\epsilon')
legend('Strain')
grid on
```