



Mech Family

كن أنت التغيير



اللجنة الأكاديمية في قسم

الهندسة الميكانيكية

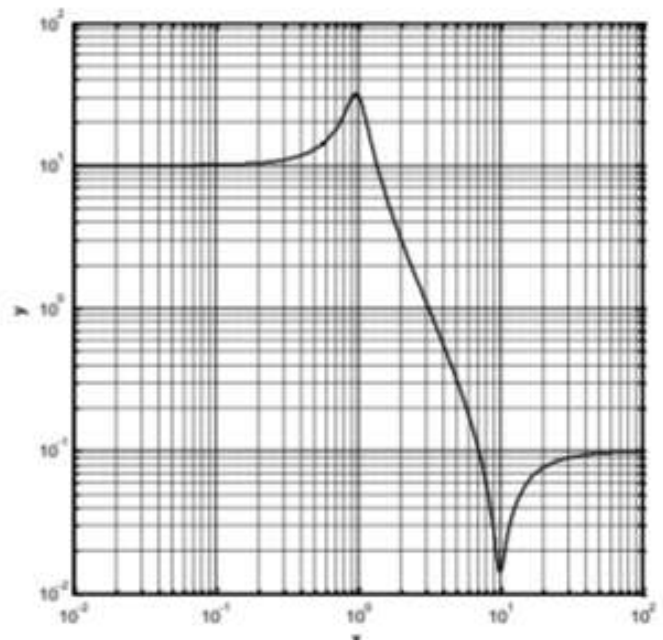
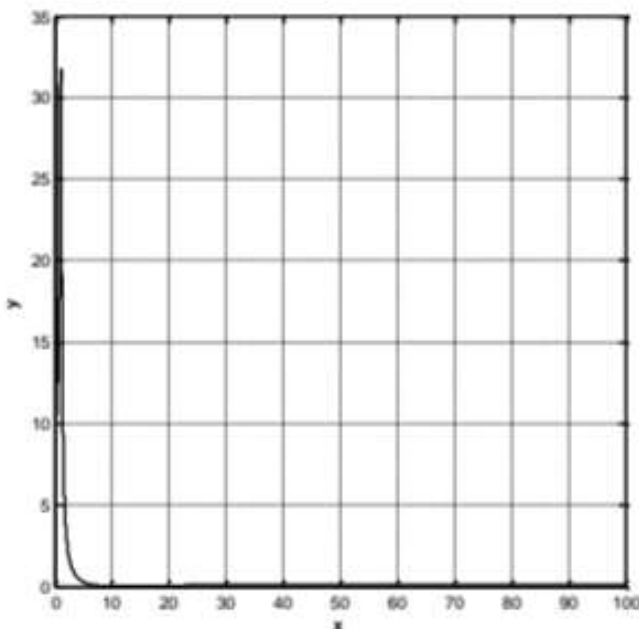
Example :

Plot the function $y = \sqrt{\frac{100(1 - 0.01x^2)^2 + 0.02x^2}{(1 - x^2)^2 + 0.1x^2}}$ $0.1 \leq x \leq 100$

The following **script file** creates the plot in figure.

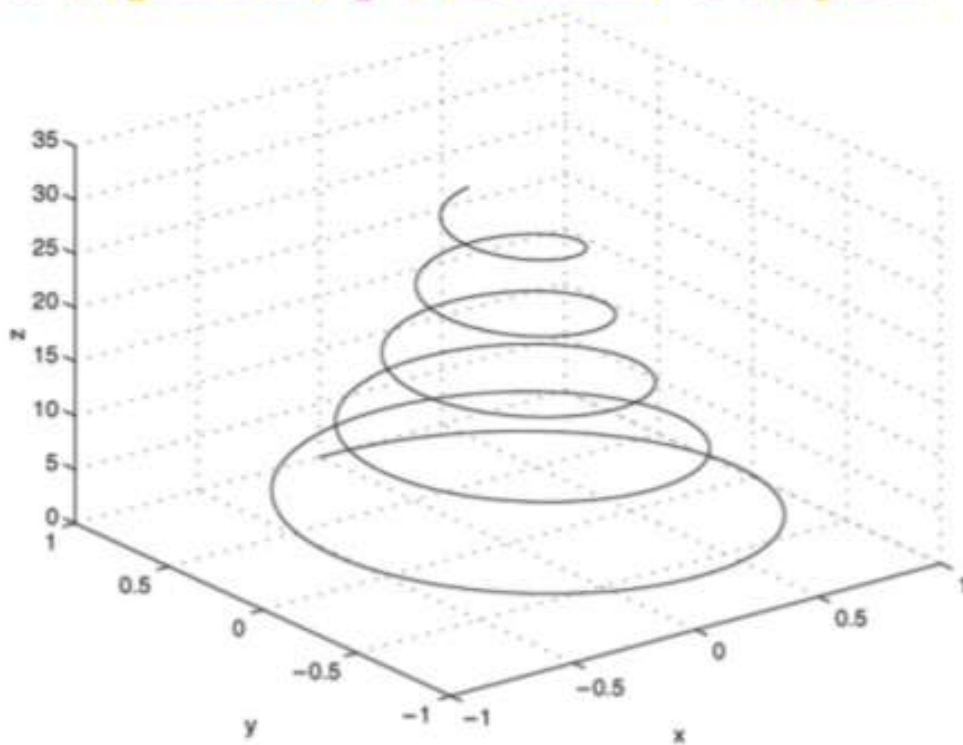
```
%Create the Rectilinear plot
x1=[0:0.01:100]; u1=x1.^2;
num1=100*(1-0.01*u1).^2+0.02*u1;
den1=(1-u1).^2+0.1*u1;
y1=sqrt(num1./den1);
subplot(1,2,1),
plot(x1,y1),xlabel('x'),ylabel('y')
%Create the log log plot
subplot(1,2,2)
loglog(x1,y1),xlabel('x'),ylabel('y')
```

$$y = \sqrt{\frac{100(1 - 0.01x^2)^2 + 0.02x^2}{(1 - x^2)^2 + 0.1x^2}} \quad 0.1 \leq x \leq 100$$



The following program uses the `plot3` function to generate the spiral curve

```
t = [0:pi/50:10*pi];  
plot3(exp(-0.05*t).*sin(t),exp(0.05*t).*cos(t),t)  
xlabel('x'),ylabel('y'),zlabel('z'),grid
```



Plots of the surface $z = xe^{-(x^2+y^2)}$ created with the mesh function and its variant forms: **meshc**, **meshz**, and **waterfall**.
a) **mesh**, b) **meshc**, c) **meshz**, d) **waterfall**.

