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CS 3RD YEAR ; SECTION : "I" ; ROLL NO.: 01
ENROLLMENT NO.: 12019009001127
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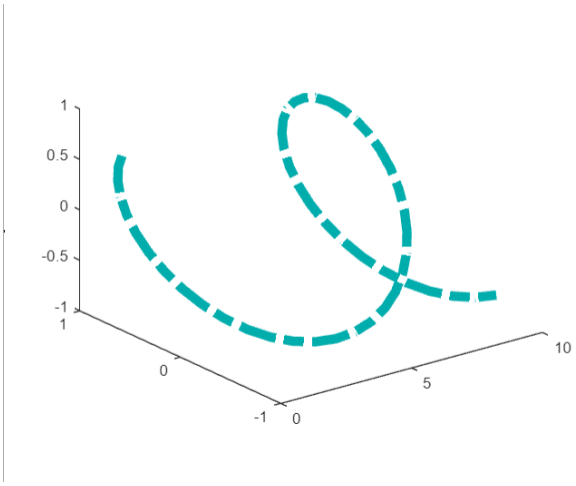
IT WORKSHOP : MODULE – MATLAB
DATE : 12.08.2021

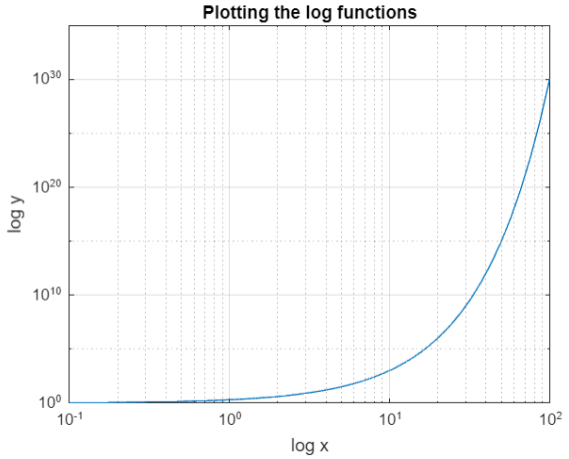
Q1. Create a script to Plot a line on 3D Plane.

```
x = linspace (1,10,50);
y = sin (x);
z = cos (x);
ln = plot3 (x,y,z);
ln.LineWidth = 6;
ln.LineStyle = "-.";
ln.Color = [0 0.68 0.68];
```

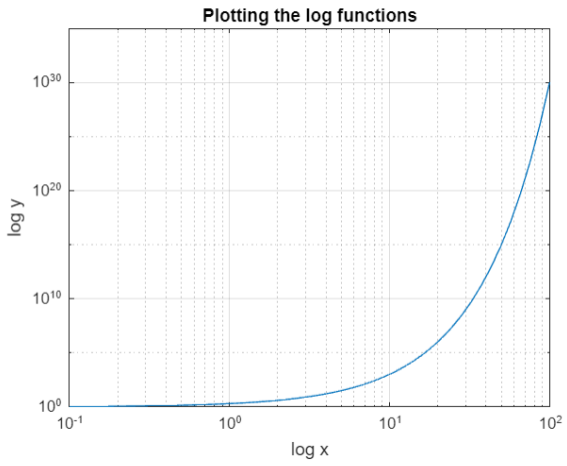


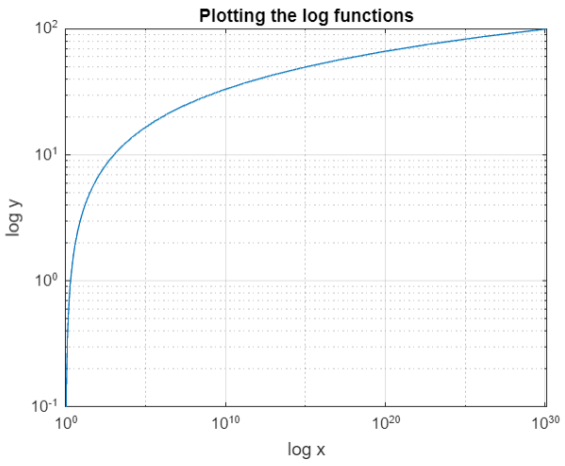
Q2. Create a script for plotting the values in the logarithmic domain.

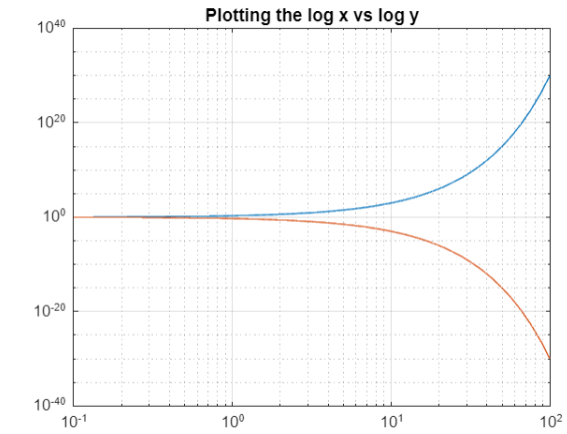
```
x = logspace (-1,2);
y = 2.^x;
loglog(x,y);
title("Plotting the log functions");
xlabel ("log x");
ylabel ("log y");
grid on;
```

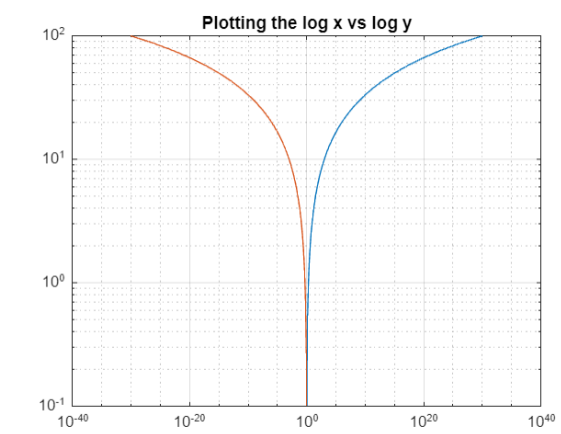


```
x = logspace (-1,2);
y = 2.^x;
loglog(x,y);
title("Plotting the log functions");
xlabel ("log x");
ylabel ("log y");
grid on;
%% Reverse of the previous graph
y = logspace (-1,2);
x = 2.^y;
loglog(x,y);
title("Plotting the log functions");
xlabel ("log x");
ylabel ("log y");
grid on;
%% Another logarithimic function
x = logspace (-1,2);
y = 2.^x;
y1 = 1./2.^x;
loglog (x,y,x,y1);
title ("Plotting the log x vs log y");
grid on;
%% Another functtion
y = logspace (-1,2);
x = 2.^y;
x1 = 1./2.^y;
loglog (x,y,x1,y);
title ("Plotting the log x vs log y");
grid on;
```

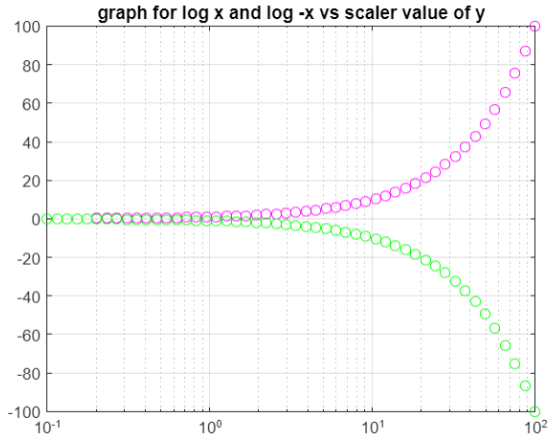




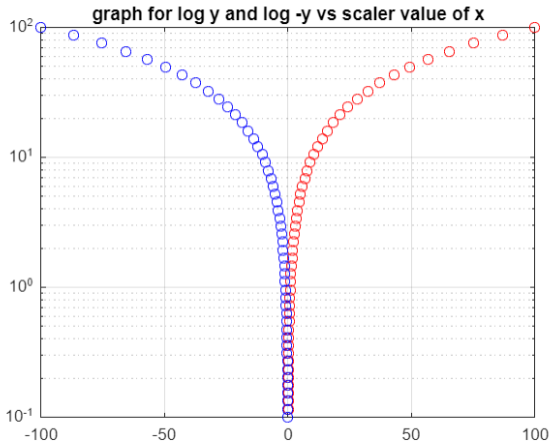




```
x = logspace (-1,2);
y1 = x;
y2 = -x;
semilogx (x,y1, "mo", x,y2, "go");
title ("graph for log x and log -x vs scaler value of y")
grid on;
```

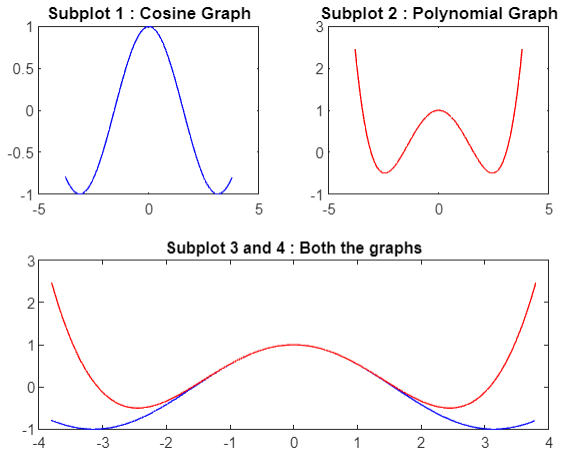



```
y = logspace (-1,2);
x1 = x;
x2 = -x;
semilogy (x1,y, "ro", x2,y, "bo");
title ("graph for log y and log -y vs scaler value of x")
grid on;
```

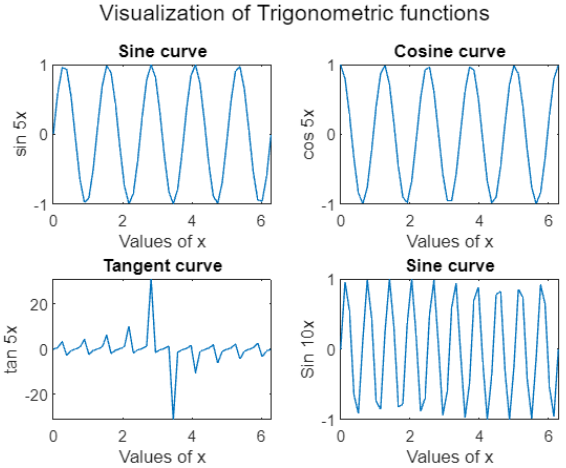


Q3. Create a script for subplot for line plotting functions

```
subplot (2,2,1);
x = linspace (-3.8,3.8);
y_cos = cos (x);
plot (x, y_cos, 'b');
title ("Subplot 1 : Cosine Graph");

subplot (2,2,2);
y_poly = 1 - x.^2./2 + x.^4./24;
plot (x,y_poly,'r');
title ("Subplot 2 : Polynomial Graph");

subplot (2,2,[3,4]);
plot (x,y_cos, 'b', x,y_poly, 'r');
title ("Subplot 3 and 4 : Both the graphs");
```

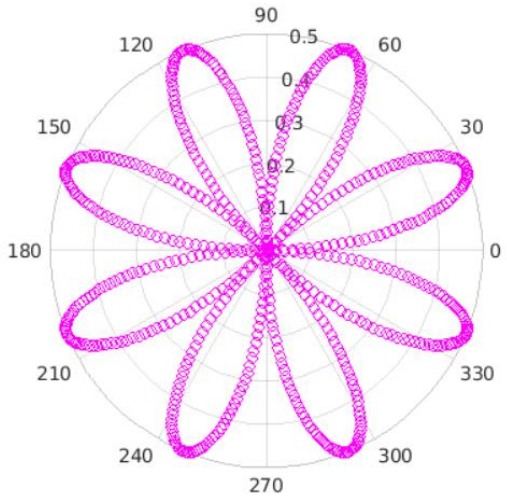



```
subplot(2,2,1);
x = linspace (0,2*pi,50);
y = sin(5*x);
grid on;
plot (x,y);
title("Sine curve")
xlabel("Values of x")
ylabel ("sin 5x")
subplot(2,2,2);
z = cos(5*x);
plot (x,z);
title("Cosine curve")
xlabel("Values of x")
ylabel ("cos 5x")
subplot(2,2,3);
a = tan(5*x);
plot(x,a);
title("Tangent curve")
xlabel("Values of x")
ylabel ("tan 5x")
subplot(2,2,4);
c = sin(10*x);
plot(x,c);
title("Sine curve")
xlabel("Values of x")
ylabel ("Sin 10x")

sgtitle ("Visualization of Trigonometric functions")
```



Q4. Create a script for Polar line operating functions

```
theta = 0:0.01:2*pi;
rho = sin (2*theta).*cos(2*theta);
polarplot(theta,rho,'mo');
```




```
theta = linspace (0,6*pi);
rho1 = theta/20;
polarplot (theta, rho1, 'b-');

rho2 = theta/10;
hold on;
polarplot (theta, rho2, 'r--');
hold off;

rho3 = theta/25;
hold on;
polarplot (theta, rho3, 'm-.');
hold off;
%% another block
rho = 10:5:70;
polarplot (rho, 'm--^');
```