**In\_lab 01**

%ROLL IS 113

t=-113:0.01:113

x=cos(t)

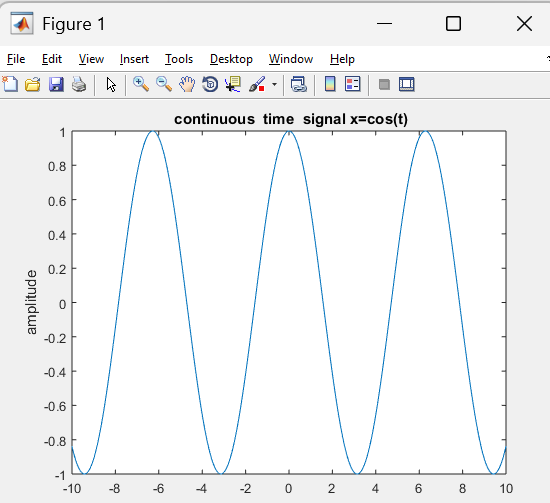
plot(t,x)

axis([-10 10 -1 1])

title(' continuous time signal x=cos(t)')

xlabel('time')

ylabel('amplitude')



**In\_lab 02**

%ROLL IS 113

n=-113:0.1:113

x=cos(n)

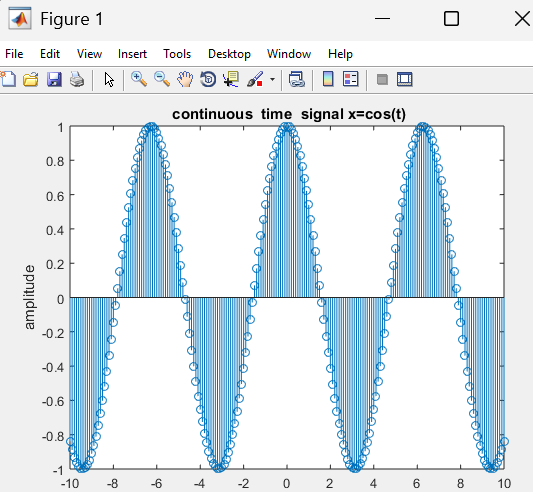
stem(n,x)

axis([-10 10 -1 1])

title(' continuous time signal x=cos(t)')

xlabel('time')

ylabel('amplitude')



**In\_lab 03**

%1

t1=-113:0.1:113

x1=cos(t1)

%2

n1=-113:0.1:113

x2=cos(n1)

% Plot both on the same figure

figure;

plot(t1, x1, 'b-', 'LineWidth', 1.5);

hold on;

stem(n1, x2, 'ro', 'MarkerSize', 4);

hold off;

axis([-10 10 -1 1])

% Labels and title

xlabel('Time');

ylabel('Amplitude');

title('Comparison of CT vs DT');

grid on;

**In\_lab 04**

R = 113;

-R:R;

x = cos(n);

stem(n, x, 'filled');

**In\_lab 05**

T = (2/3);

t= 0:0.001:4\*T;

x=3\*cos(3\*pi\*t +pi/3)

figure;

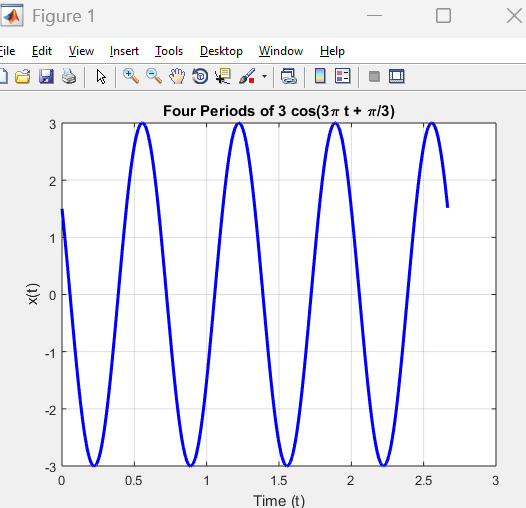
plot(t, x, 'b', 'LineWidth', 2);

xlabel('Time (t)');

ylabel('x(t)');

title('Four Periods of 3 cos(3\pi t + \pi/3)');

grid on;



**In\_lab 06**

t = -2\*pi:0.01:2\*pi;

x1 = cos(t);

x2 = sin(t + pi/2);

subplot(2,1,1); % 2 rows, 1 column, 1st plot

plot(t, x1, 'b', 'LineWidth', 2);

xlabel('Time (t)');

ylabel('Amplitude');

title('Cosine Wave: cos(t)');

grid on;

subplot(2,1,2); % 2 rows, 1 column, 2nd plot

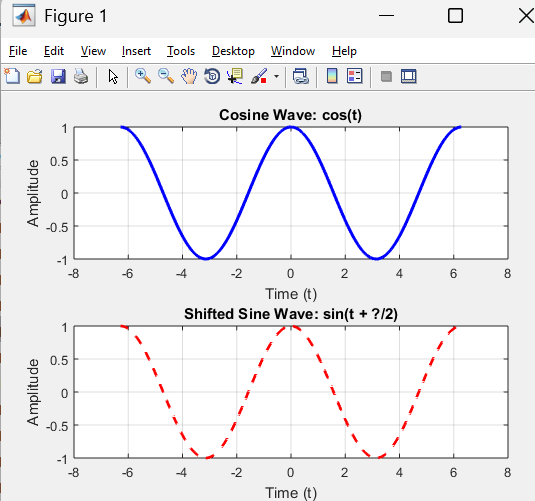
plot(t, x2, 'r--', 'LineWidth', 2);

xlabel('Time (t)');

ylabel('Amplitude');

title('Shifted Sine Wave: sin(t + ?/2)');

grid on;



**In\_lab 07**

A = 113;

B1 = A / 100;

B2 = -A / 100;

T = A / 2;

% Define time range

t = -T:0.1:T;

% Compute signals

x\_t = A \* exp(B1 \* t);

y\_t = A \* exp(B2 \* t);

% Plot signals using subplot

figure;

hold on

plot(t, x\_t, 'b.', 'LineWidth', 2);

hold on

xlabel('Time (t)');

ylabel('Amplitude');

title('Signal x(t) = A e^{\beta\_1 t}');

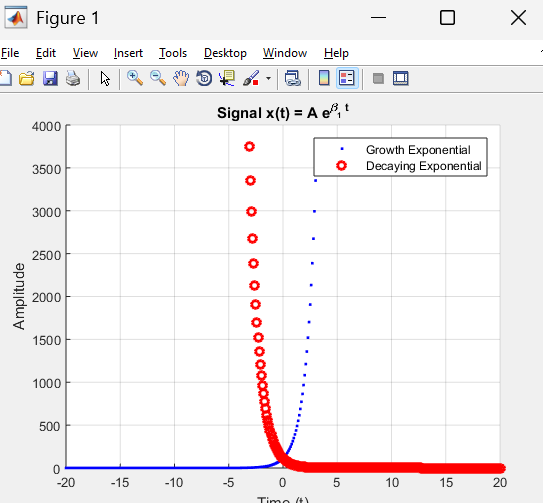
grid on;

plot(t, y\_t, 'ro', 'LineWidth', 2);

legend('Growth Exponential', 'Decaying Exponential');

hold off

axis([-20 20 0 4000])



**In\_lab 08**

T = 2;

t = 0:0.1:T;

y\_t = exp(1j \* (pi \* t + pi/3));

real\_part = real(y\_t);

imag\_part = imag(y\_t);

hold on;

plot(t, real\_part, 'b', 'LineWidth', 2);

plot(t, imag\_part, 'r--', 'LineWidth', 2);

xlabel('Time (t)');

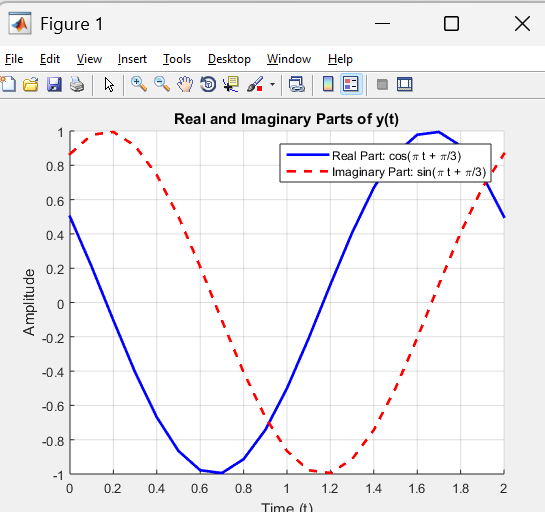
ylabel('Amplitude');

title('Real and Imaginary Parts of y(t)');

legend('Real Part: cos(\pi t + \pi/3)', 'Imaginary Part: sin(\pi t + \pi/3)');

grid on;

hold off;



**In\_lab 09**

t=-5:0.01:5;

x=heaviside(t)

plot(t,x)

axis([-8 8 -0.1 1.2])

**In\_lab 10**

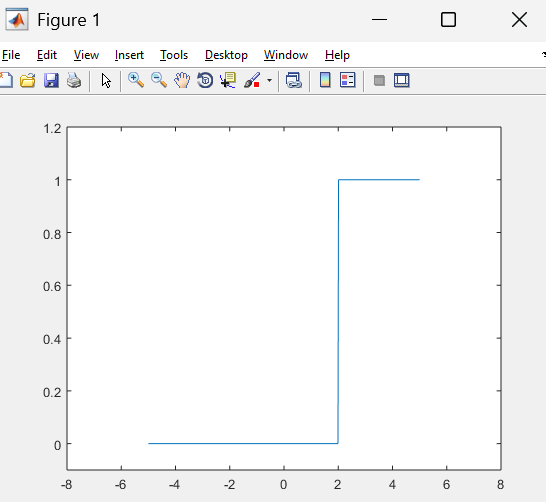
t = -5:0.01:5;

t0 = 2;

x = heaviside(t - t0);

plot(t,x)

axis([-8 8 -0.1 1.2])



**In\_lab 11**

t=-3:0.1:3

y= inf==dirac(t)

plot(t,y)

xlabel('Time')

ylabel('Amplitude')

title('Unit impulse using dirac(t)')

