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## 3.2

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mySig.freq = 400; %-- (in hertz)
mySig.complexAmp = 3*exp(j*pi/5);
dur = 3;
start = -1;
fs = 32*mySig.freq;
dt = 1/(32*mySig.freq);
mySigWithVals = makeCosVals( mySig, dur, start, dt );
%- Plot the values in sigWithVals
plot(mySigWithVals.times,mySigWithVals.values)%<--- complete the plot
    statement
xlim([-1, -0.96])
xlabel('t [s]')
ylabel('x(t)')

figure;
spectrogram(mySigWithVals.values, 256, 200, [], fs , 'centered', 'yaxis');
colorbar;

function sigOut = makeCosVals(sigIn, dur, tstart, dt ) %
freq = sigIn.freq;
X = sigIn.complexAmp;

A = abs(X);
phi = angle(X)
N = ceil(dur/dt);
T = N*dt;

tt = tstart: dt : tstart + T; %-- Create the vector of times
xx = A*cos(2*pi*freq*tt + phi); %-- Vectorize the cosine evaluation
sigOut.times = tt; %-- Put vector of times into the output structure
sigOut.values = xx; %-- Put values into the output structure

end

phi =

    0.6283
```

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