%ASSIGNMENT 1: MANIPULATING SINUSOIDS WITH MATLAB-

ANNETTE AMPEH 9777513 COMPUTER ENG.

f= 4000;%frequency

T= 1/f;%period

fs=T/25;%sampling rate

tt=-T:fs:T; % a time vector increasing small enough to ensure there are 25 samples per period

stem(tt,cos(2\*pi\*4000\*tt));%allowing for discrete sequence: sampling

A1=24;%amplitude of first sinusoid

A2=(1.2\*A1);%amplitude of second sinusoid

M=2;% my month of birth

tm1=(37.2/M)\*T;% time shift of the first sinusoid

D=3;% my day of birth

tm2=-(41.3/D)\*T;%time shift of the second sinusoid

x1=A1\*cos(2\*pi\*(4000)\*(tt-tm1));% First Sinusoid

subplot(3,1,1)

stem (tt,x1,'r');

title('Sinusoid 1: A 4kHz sinusoid with a 4.65ms time shift')

xlabel('time(sec)')

ylabel('amplitude')

x2=A2\*cos(2\*pi\*(4000)\*(tt-tm2));% Second Sinusoid

subplot (3,1,2)

stem (tt,x2,'bl');

title ('Sinusoid 2: A 4kHz sinusoid with a -3.44ms time shift')

xlabel('time(sec)')

ylabel('amplitude')

x3=x1+x2;

subplot (3,1,3)

stem (tt,x1,'g');

%plot (tt,x3), grid on

title ('Sinusoid 3:Vector Sum of x1 and x2')

xlabel('time(sec)')

ylabel('amplitude')

