clear all

clc

% if x values [1 2 3 4] use the below if not , =e^-(anT)^2 = (1/1-e^-a)then find

% the value

a=4;

xe= 1/(1-exp(-a));

x=[1 0 -2 1.5];

E = sum(abs(x).^2);

%Ep = 1/4\*sum(abs(Xdft).^2);

%SQNR

xn = [0.4, 0.32, 0.56, 1.11];

x\_quantied = [0.25, 0.75, 1.25, 0];

P\_sig = 1/length(xn)\*(sum((xn.^2)));

P\_noise = 1/length(xn)\*(sum((x\_quantied- xn).^2));

%linear

lin = P\_sig/P\_noise;

dB = 10\*log10(lin);

%%

%AB = C, C= A\B

clear

clc

w=0.2;

A = [1, 1, 0;

-2\*cos(w), 0.25-cos(w), sin(w);

1 , -0.25\*cos(0.2), 0.25\*sin(0.2)];

C = [0; sin(0.2); 0];

B = A\C;%[A;B;c]

% A(-0.25)^n + Bcos(wn) + Csin(wn)un

%%

clear

clc

w=2.2;

T =0.5;

z=exp(i\*w\*T);

H = z.^2/(z^2+0.5\*z+0.06);

abs(H)

%%

clear

clc

%limit(F,x,a) takes the limit of the symbolic expression F as x -> a.

n=0:10000;

xn = sin(0.2\*pi.\*n).\*cos(0.3\*pi.\*n)+0.9.\*(cos(0.4\*pi.\*n)).^2;

p = limit(1./(2\*n+1)\*sum(abs(xn).^2),n,inf);

%%

clear

clc

w=2;

T =0.1;

z=exp(i\*w\*T);

hz= 0.6+0.2\*z.^-1+0.1\*z.^-2+0.1\*z.^-3;

xz = 0.3+0.2\*z.^-1+-0.1\*z.^-2+0.05\*z.^-3;

yz=hz\*xz;

angle(yz)