



정보통신 수학 및 실습

Lab assignment



학번 : 2016110056 2012112130

이름 : 박승원 노희승

편성 : 20조 2017년 6월 5일

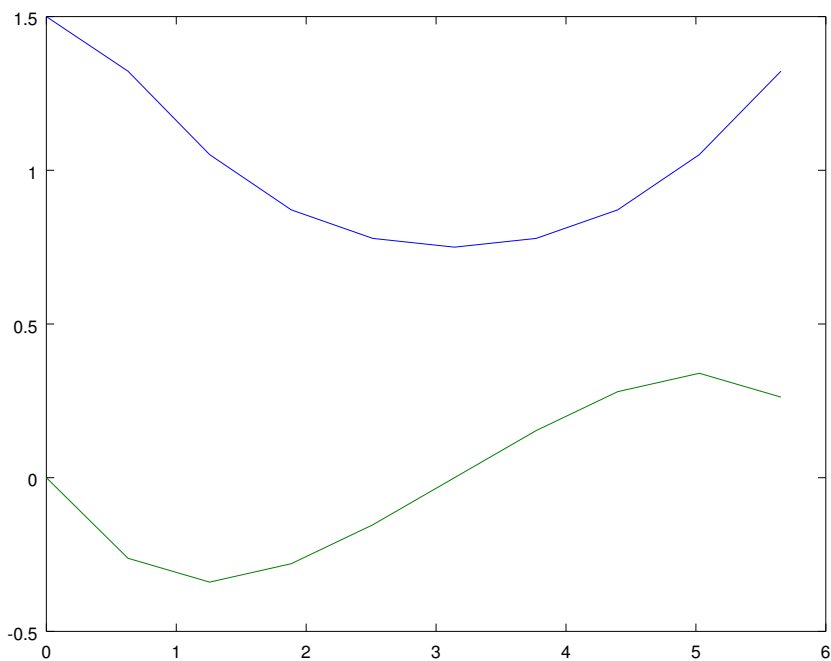
Chapter 12 Lab Assignment(DTFT)

1. Program DTFT $X(w)$ of $x[n] = (1/3)^n u[n]$ and plot the magnitude of $X(w)$.

```
a1 = 1/3;
max_limit = 10;
for n=[0:max_limit-1]
    x1(n+1) = a1^n;
end

n = [0:max_limit-1];
Wmax = 2*pi;
W = n*Wmax/max_limit;
L = length(W);
clear XW;
for k=[1:L]
    XW(k) = x1 * exp(-j*n'*W(k));
end

plot(W, abs(XW), W, angle(XW))
```



2. Program DTFT $X(w)$ of $x[n]=1, |n| \leq 2$ and plot the magnitude of $X(w)$.

```
x = [0,0,0,0,0,1,1,1,1,0,0,0,0]
n = [-7:1:7]
W = linspace(0, 2*pi, 15)
```

```

L=length(W);
clear XW;
for k=[1:1:L]
    XW(k) = x * exp (-j*n'*W(k)) ;
end

plot(W, abs(XW), W, angle(XW))

```

