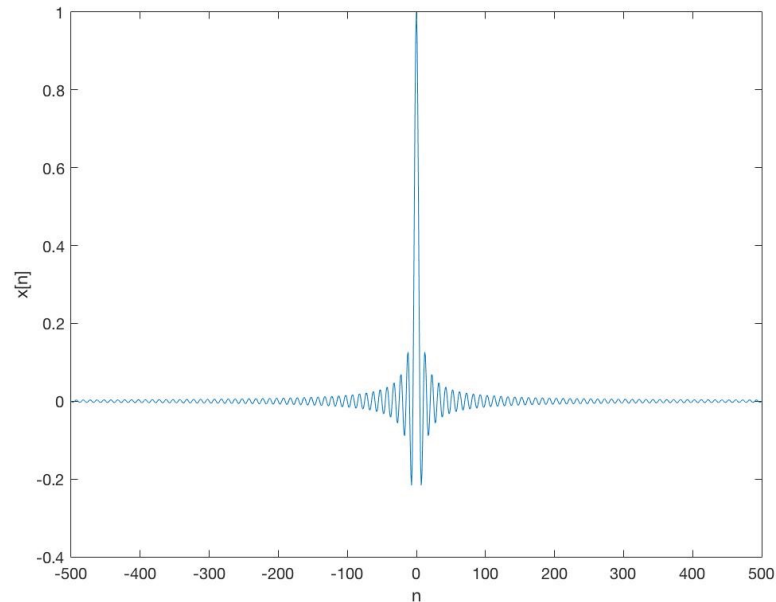


# MATLAB HW2 Report

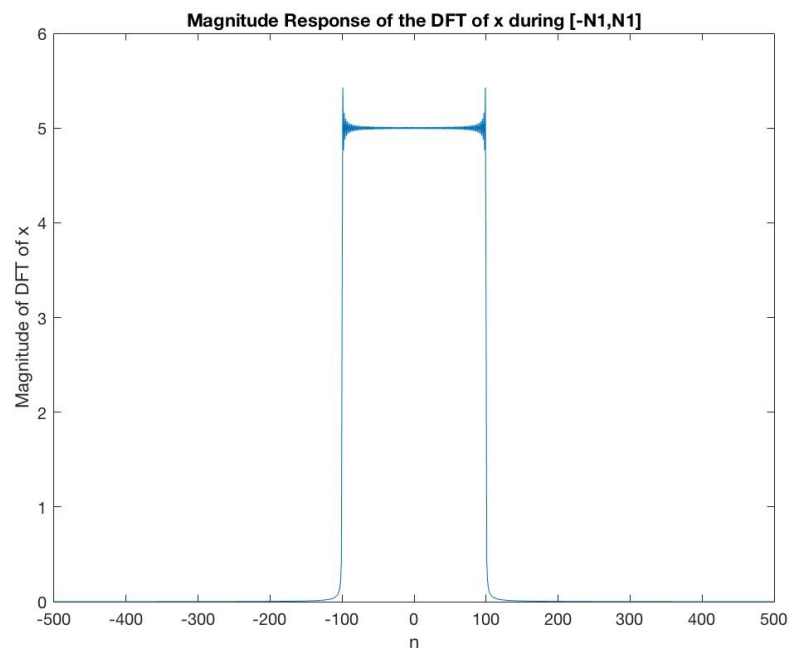
B04705036 電機二 許天鈞

1.

(a)  $x[n]$



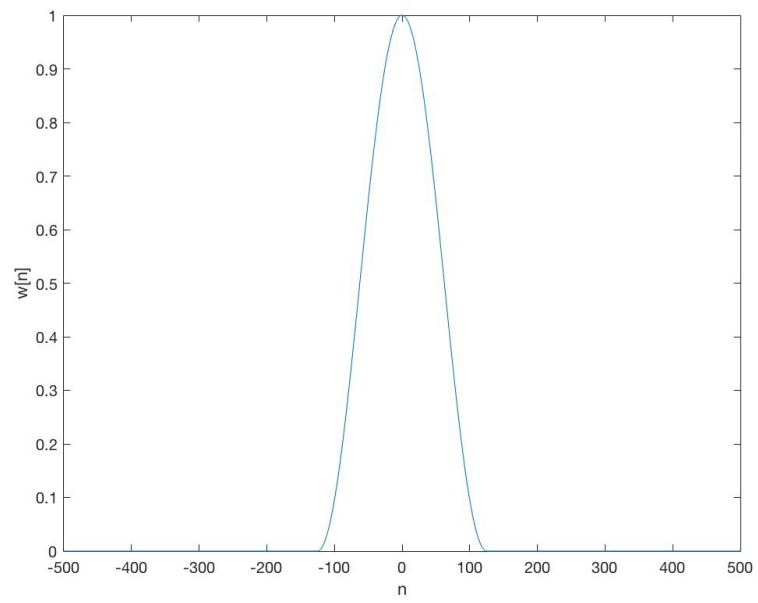
(b) The magnitude response if the DFT of  $x$  during  $[-N1, N1]$



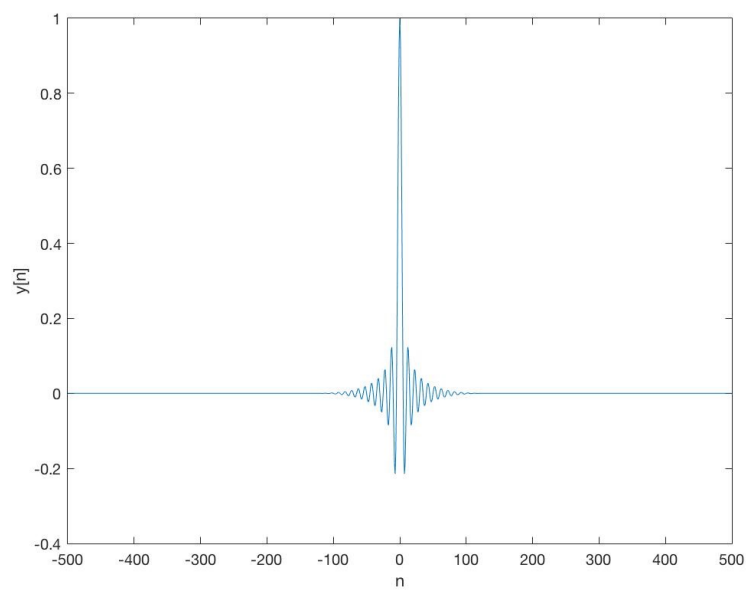
Observation of Gibbs phenomenon of fig.1-(b): 可看出圖形明顯在magnitude=5的附近上下震盪，且震幅最大值約為5.6，同時，即使在圖形中央處（非邊緣處）仍有震盪，收斂緩慢，Gibbs phenomenon極為明顯。

2.

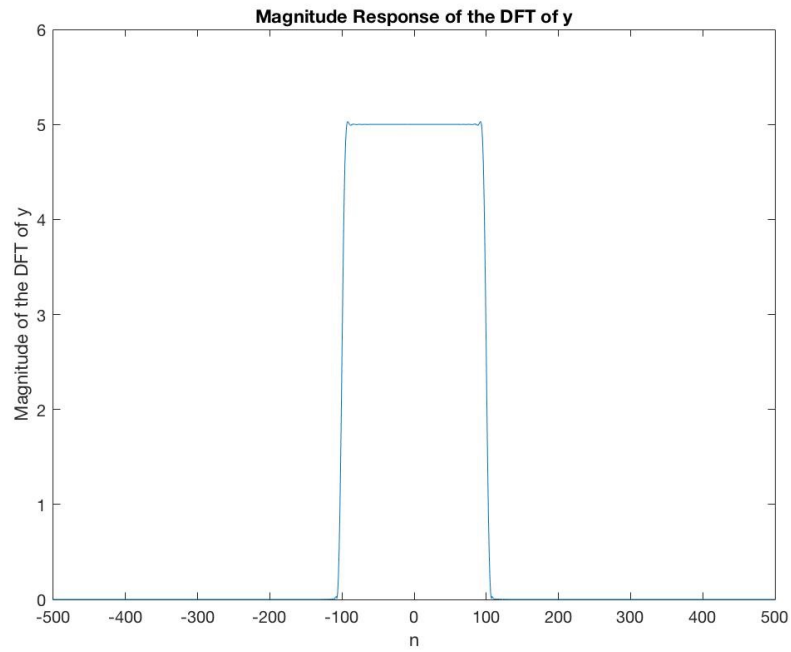
(a)  $w[n]$



(b)  $y[n]$



(c) The magnitude response of the DFT of  $y[n]$



Observation of Gibbs phenomenon of fig.2-(c) & Comparison with fig 1-(b):  
比較兩圖後可明顯看出乘上 $w[n]$ 後的DFT圖形不僅震盪情形改善許多，僅在圖形邊緣處有微小震盪，且最大振幅也約不到5.1，同時也更快收斂到5附近。