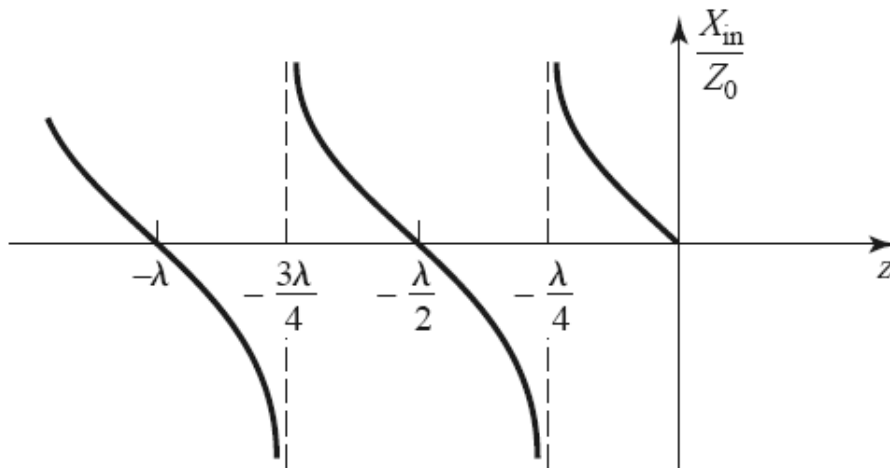
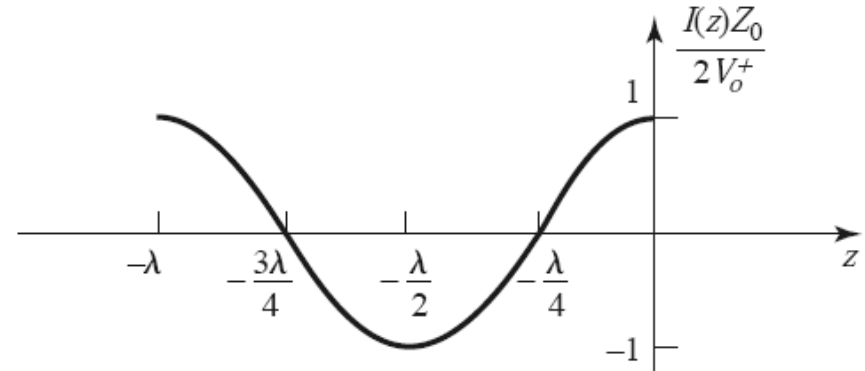
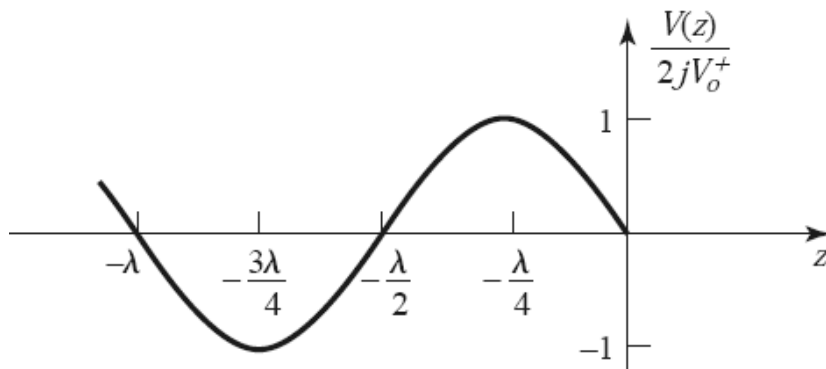


## **HA # 1**

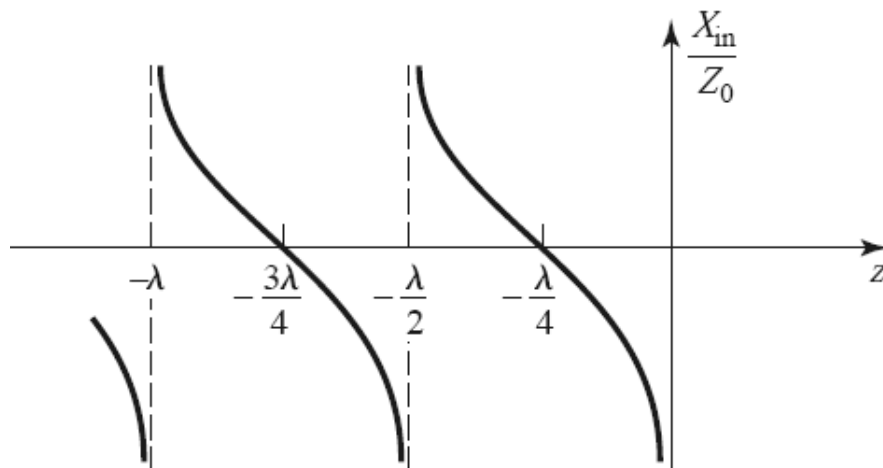
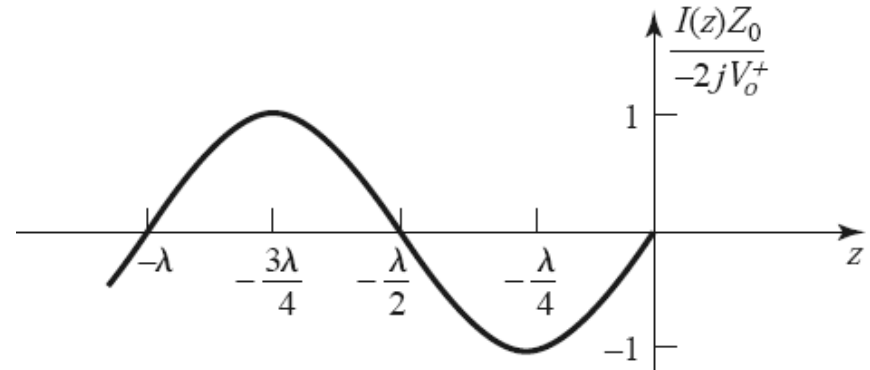
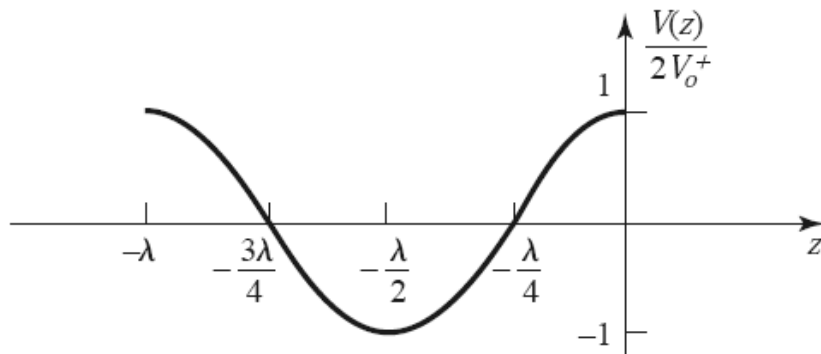
- 1. Consider a load resistance  $R_L = 100\Omega$  to be matched to a  $50\Omega$  line with a quarter-wave transformer. Find the characteristic impedance of the matching section and plot the magnitude of the reflection coefficient versus normalized frequency,  $f/f_0$ , where  $f_0$  is the frequency at which the line is  $\lambda/4$  long.**

## 2. Short-Circuited Line



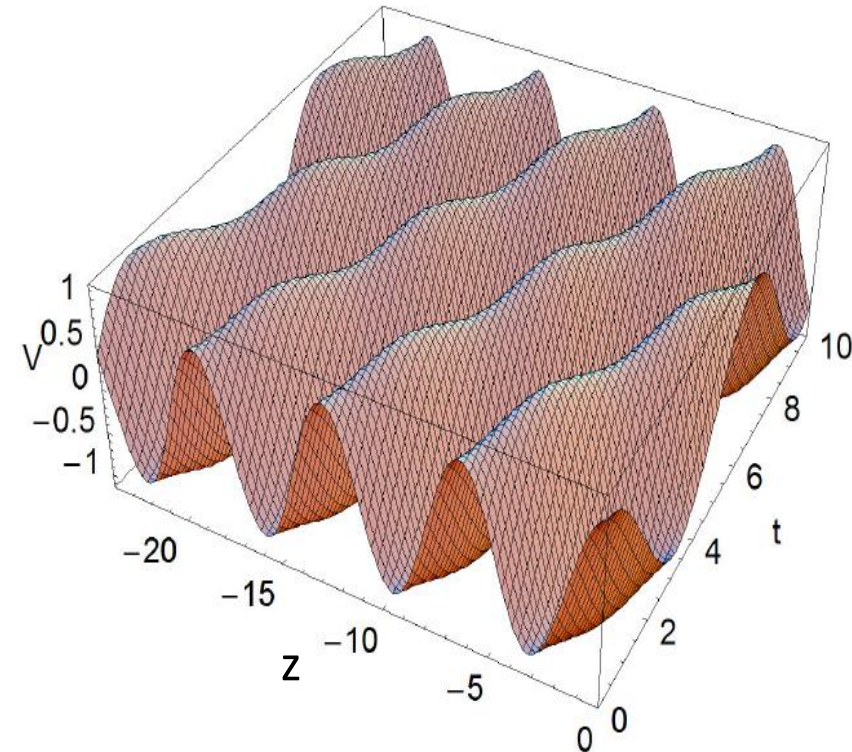
**plot these curves using  
MATLAB and ADS for  
frequency range of your  
choice.**

### 3. Open-Circuited Line

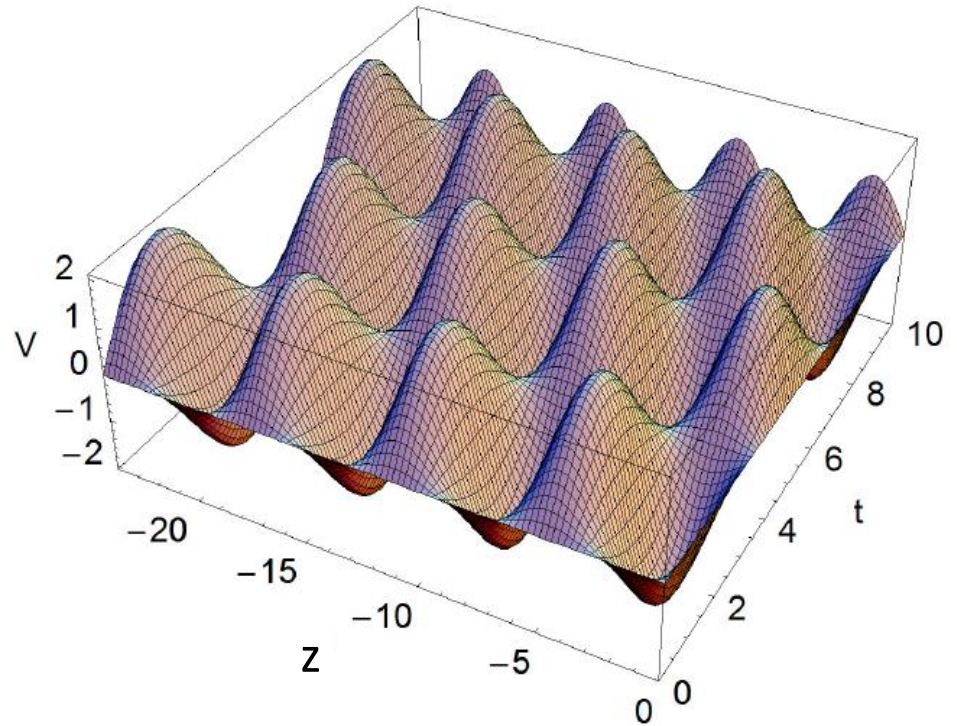


**plot these curves using  
MATLAB and ADS for  
frequency range of your  
choice.**

## 4. Standing Wave



Standing Wave Pattern at  $\Gamma_0=0.1$



Standing Wave Pattern at  $\Gamma_0=1$

demonstrate these  
curves using MATLAB