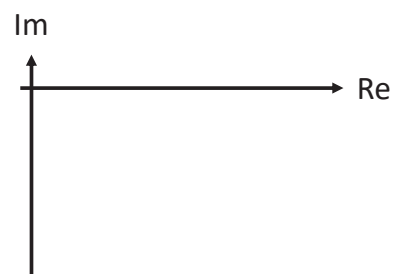
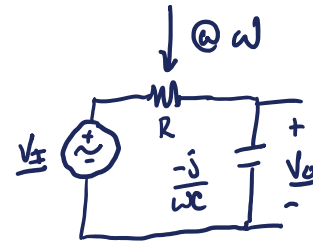
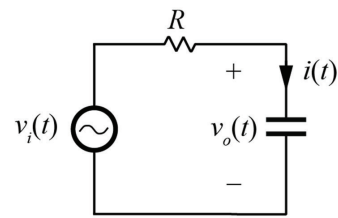


# Frequency Response

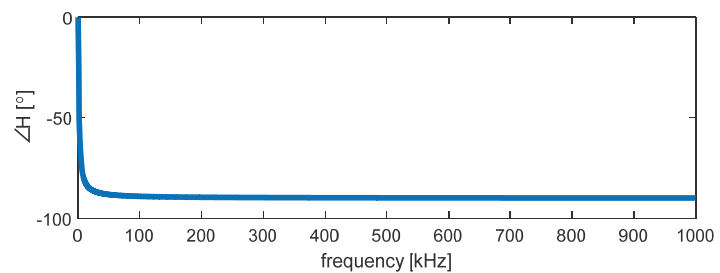
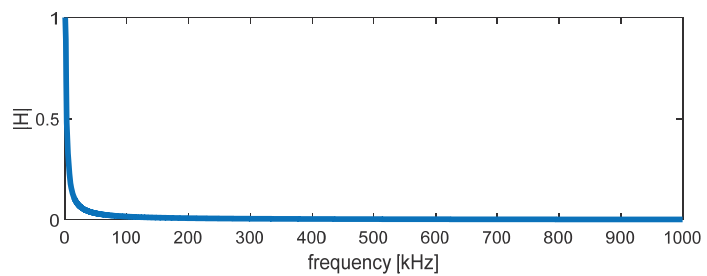
Solve with  $\omega$  as a variable

$$\underline{V}_o = \underline{V}_I \frac{\frac{-j}{\omega C}}{R - \frac{j}{\omega C}} = \underline{V}_I \frac{1}{j\omega RC + 1}$$

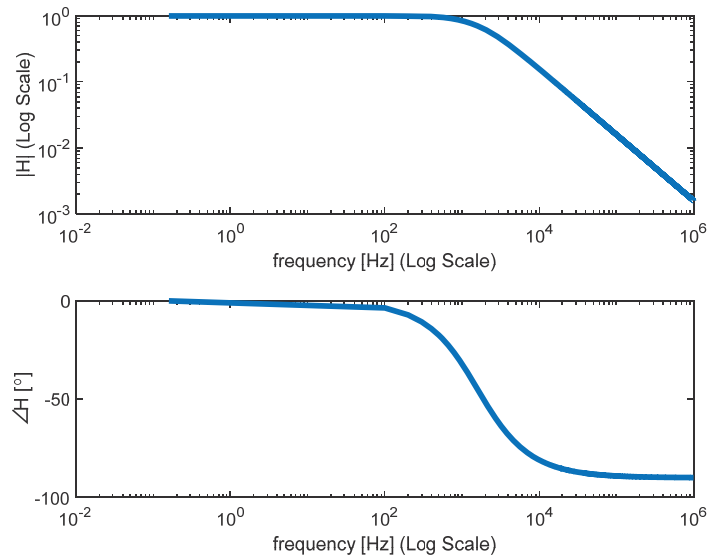
$\downarrow$  some complex number  
 $H(j\omega)$   
 $\downarrow$  Frequency Response



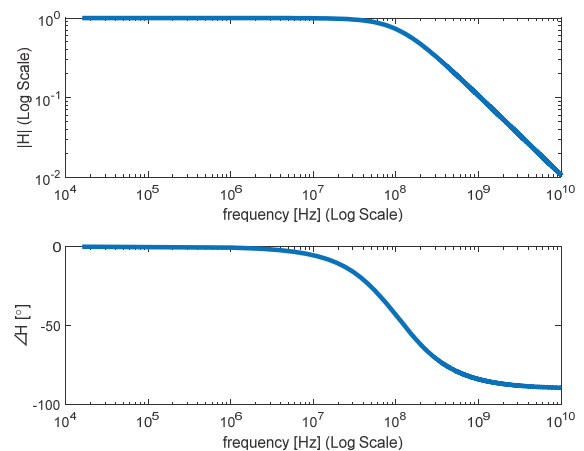
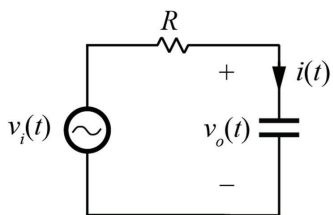
# Frequency Response



# Bode Plot – Frequency Response



## Application: Digital Communication



# Fourier Series

<https://www.falstad.com/fourier/Fourier.html>

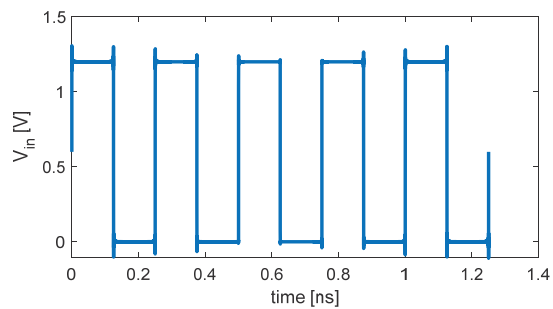
## Fourier Series & Frequency Domain



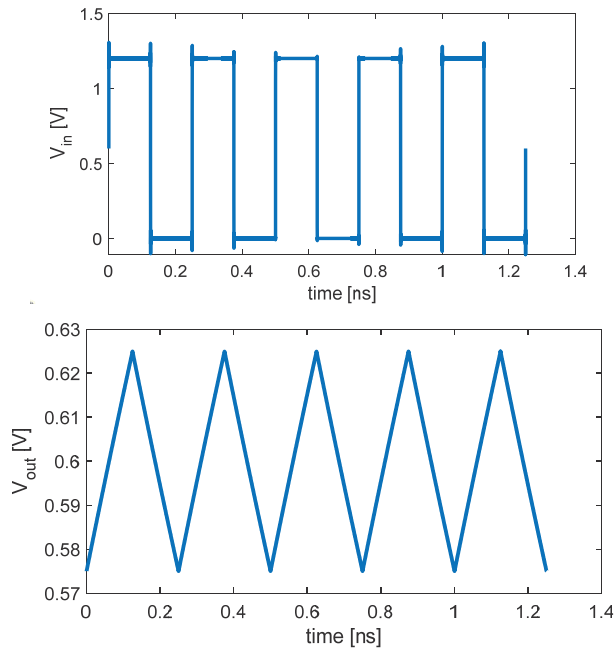
# Input Spectrum



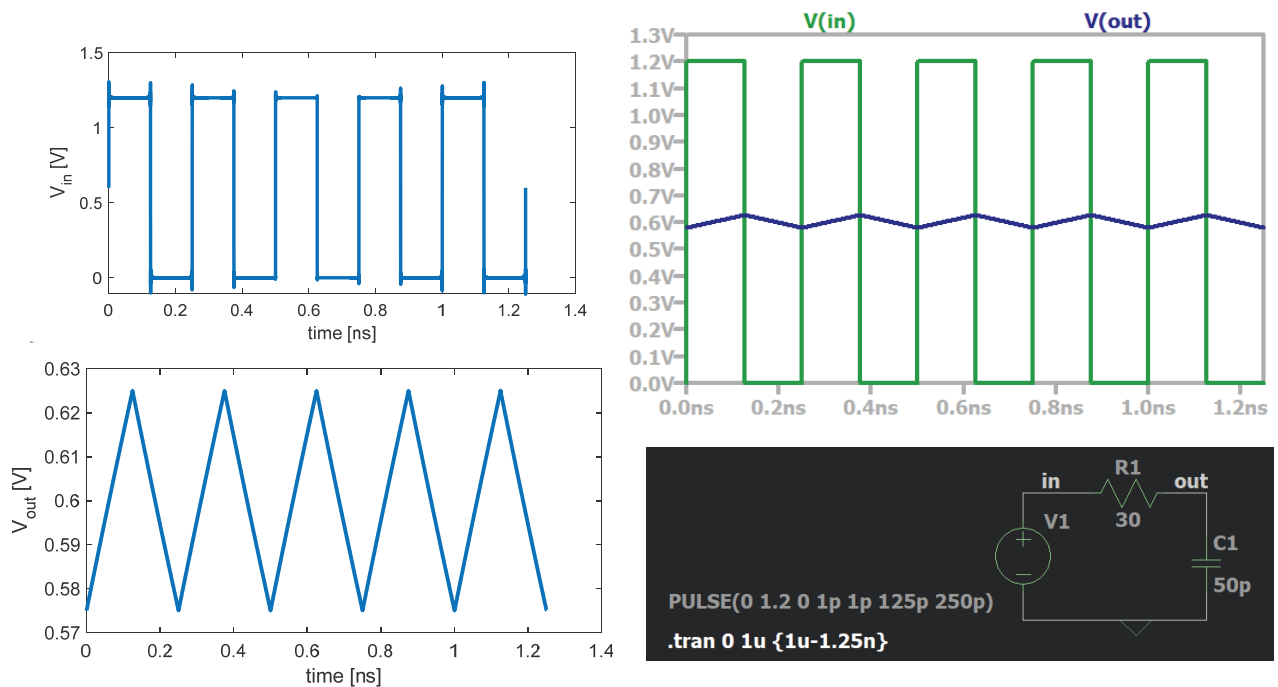
## Applying Superposition



# Calculated Output Voltage



# Simulation Verification



# Frequency Domain Interpretation

