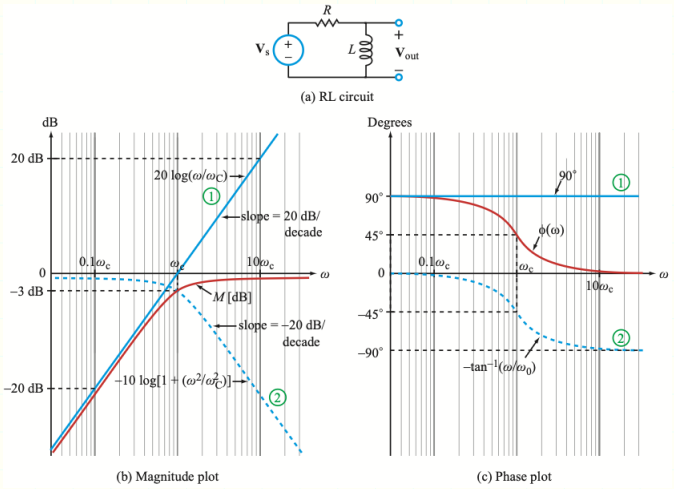
Problem 6.8 :

Given:



Find: The magnitude and phase plots for the following voltage transfer functions. (Start with the asymptotic plots learned in class).

a. $\mathbf{H}(\omega) = \frac{j100\omega}{10+j\omega}$

b. $\mathbf{H}(\omega) = \frac{0.4(50+j\omega)^2}{(j\omega)^2}$

c. $\mathbf{H}(\omega) = \frac{(40+j80\omega)}{(10+j50\omega)}$

d. $\mathbf{H}(\omega) = \frac{(20+j5\omega)(20+j\omega)}{j\omega}$

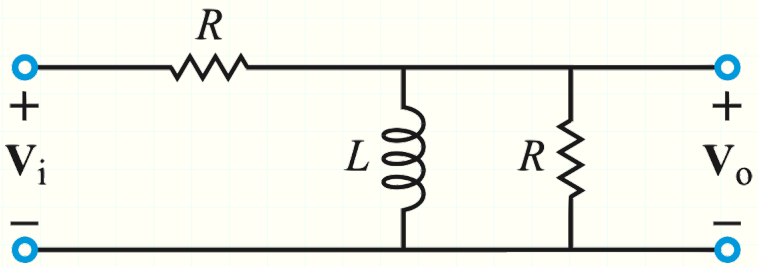
e. $\mathbf{H}(\omega) = \frac{30(10+j\omega)}{(200+j2\omega)(1000+j2\omega)}$

f. $\mathbf{H}(\omega) = \frac{j100\omega}{(100+j5\omega)(100+j\omega)^2}$

g. $\mathbf{H}(\omega) = \frac{(200+j2\omega)}{(50+j5\omega)(1000+j\omega)}$

Problem 6.18 :

Given:



Find:

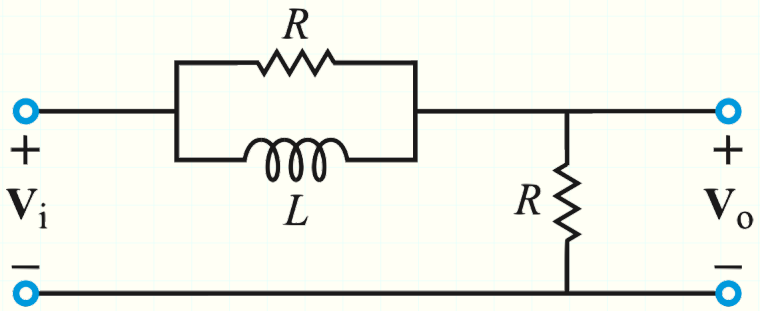
a. An expression for $\mathbf{H}(\omega) = \mathbf{V}_o/\mathbf{V}_i$ in standard form.

b. Spectral plots for the magnitude and phase of $\mathbf{H}(\omega)$ given that $R = 50\ \Omega$ and $L = 2\ mH$.

c. The cutoff frequency ω_c and the slope fo the magnitude (in dB) when $\omega/\omega_o \ll 1$

Problem 6.19 :

Given:



Find:

a. An expression for $\mathbf{H}(\omega) = \mathbf{V}_o/\mathbf{V}_i$ in standard form.

b. Spectral plots for the magnitude and phase of $\mathbf{H}(\omega)$ given that $R = 50\ \Omega$ and $L = 2\ mH$.