12.7 Determine the driving point impedance at the input terminals of the network shown in Fig. P12.7 as a function of $s$.

![Network Diagram]

**Figure P12.7**

12.8 Find the transfer impedance $V_c(s)/I_x(s)$ for the network shown in Fig. P12.8.

![Network Diagram]

**Figure P12.8**

12.9 Draw the Bode plot for the network function

$$H(j\omega) = \frac{j\omega}{j\omega + 1}$$

12.10 Draw the Bode plot for the network function

$$H(j\omega) = \frac{j\omega}{(j\omega + 1)(0.1j\omega + 1)}$$

12.11 Sketch the magnitude characteristic of the Bode plot for the transfer function

$$H(j\omega) = \frac{100(j\omega)}{(j\omega + 1)(j\omega + 10)(j\omega + 50)}$$

12.12 Draw the Bode plot for the network function

$$H(j\omega) = \frac{10j\omega + 1}{j\omega(0.01j\omega + 1)}$$

12.13 Sketch the magnitude characteristic of the Bode plot for the transfer function

$$H(j\omega) = \frac{20(0.1j\omega + 1)}{j\omega(0.1j\omega + 1)(0.01j\omega + 1)}$$

12.14 Draw the Bode plot for the network function

$$H(j\omega) = \frac{100}{(j\omega)^2(j\omega + 1)}$$

12.15 Sketch the magnitude characteristic of the Bode plot for the transfer function

$$G(j\omega) = \frac{200(j\omega + 2)(j\omega + 50)}{-\omega^2(j\omega + 100)^2}$$

12.16 Sketch the magnitude characteristic of the Bode plot for the transfer function

$$G(j\omega) = \frac{10j\omega}{(j\omega + 1)(j\omega + 10)^2}$$

12.17 Sketch the magnitude characteristic of the Bode plot for the transfer function

$$G(j\omega) = \frac{-\omega^210^4}{(j\omega + 1)^2(j\omega + 10)(j\omega + 100)^2}$$

12.18 Sketch the magnitude characteristic of the Bode plot for the transfer function

$$G(j\omega) = \frac{-\omega^2}{(j\omega + 1)^3}$$

12.19 Sketch the magnitude characteristic of the Bode plot for the transfer function

$$H(j\omega) = \frac{+6.4}{(j\omega + 1)^2(-\omega^2 + 8j\omega + 16)}$$

12.20 Sketch the magnitude characteristic of the Bode plot for the transfer function

$$H(j\omega) = \frac{10j\omega + 1}{(j\omega + 1)(0.1j\omega + 1)}$$

12.21 Sketch the magnitude characteristic of the Bode plot for the transfer function

$$H(j\omega) = \frac{10(5j\omega + 1)}{(100j\omega + 1)(0.02j\omega + 1)}$$

12.22 Sketch the magnitude characteristic of the Bode plot for the transfer function

$$H(j\omega) = \frac{0.1(2j\omega + 1)}{j\omega(0.1j\omega + 1)(0.01j\omega + 1)}$$

12.23 Sketch the magnitude characteristic of the Bode plot for the transfer function

$$H(j\omega) = \frac{0.5(10j\omega + 1)(j\omega + 1)}{j\omega(0.1j\omega + 1)(0.01j\omega + 1)^2}$$

12.24 Sketch the magnitude of the Bode plot for the transfer function

$$H(j\omega) = \frac{250(j\omega + 10)}{(j\omega)^2(j\omega + 100)^2}$$

12.25 Sketch the magnitude characteristic of the Bode plot for the transfer function

$$G(j\omega) = \frac{10(j\omega + 2)(j\omega + 100)}{j\omega(-\omega^2 + 4j\omega + 100)}$$
12.26 Sketch the magnitude characteristic of the Bode plot for the transfer function

\[ H(j\omega) = \frac{+6.4(j\omega)}{(j\omega + 1)(-\omega^2 + 8j\omega + 64)} \]

12.27 Find \( H(j\omega) \) if its magnitude characteristic is shown in Fig. P12.27.

12.28 Determine \( H(j\omega) \) from the magnitude characteristic shown in Fig. P12.28.

12.29 Determine \( H(j\omega) \) from the magnitude characteristic of the Bode plot shown in Fig. P12.29.

12.30 Determine \( H(j\omega) \) from the magnitude characteristic of the Bode plot shown in Fig. P12.30.

12.31 The magnitude characteristic of a band-elimination filter is shown in Fig. P12.31. Determine \( H(j\omega) \).

12.32 Given the magnitude characteristic in Fig. P12.32, find \( H(j\omega) \).

12.33 Find \( H(j\omega) \) if its magnitude characteristic is shown in Fig. P12.33.