Chapter 14, Solution 7.

(a) $0.05 = 20\log_{10} \mathrm{H}$

$2.5\times10^{-3} = \log_{10} \mathrm{H}$

$\mathrm{H} = 10^{2.5\times10^{-3}} = \underline{\mathbf{1.005773}}$

(b) $-6.2 = 20\log_{10}\mathrm{H}$

$-0.31 = \log_{10}\mathrm{H}$

$\mathrm{H} = 10^{-0.31} = \underline{\mathbf{0.4898}}$

(c) $104.7 = 20\log_{10} \mathrm{H}$

$5.235 = \log_{10} \mathrm{H}$

$\mathrm{H} = 10^{5.235} = \underline{\mathbf{1.718\times10^{5}}}$

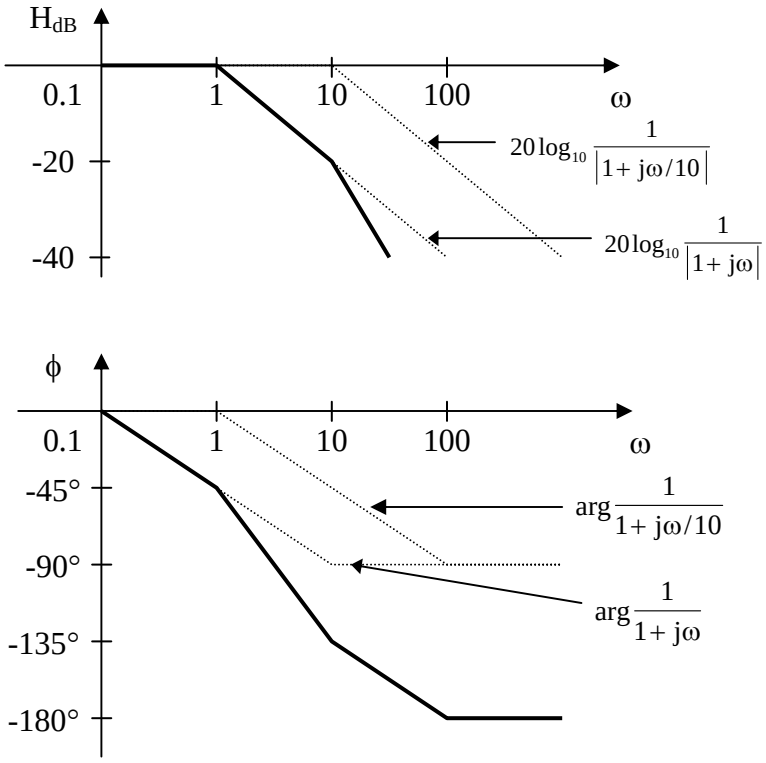
Chapter 14, Solution 9.

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

$$H_{dB} = -20\log_{10}\left|1+ j\omega\right| - 20\log_{10}\left|1+ j\omega/10\right|$$

$$\phi = -\tan^{-1}(\omega) - \tan^{-1}(\omega/10)$$

The magnitude and phase plots are shown below.



Chapter 14, Solution 11.

$$\mathbf{H}(\omega) = \frac{5(1 + j\omega/10)}{j\omega(1 + j\omega/2)}$$

$$H_{dB} = 20\log_{10} 5 + 20\log_{10}\left|1 + j\omega/10\right| - 20\log_{10}\left|j\omega\right| - 20\log_{10}\left|1 + j\omega/2\right|$$

$$\phi = -90° + \tan^{-1}\omega/10 - \tan^{-1}\omega/2$$

The magnitude and phase plots are shown below.