

2.77 Repeat Problem 2.76 for the current $I(z, t)$ on the line.

Solution:

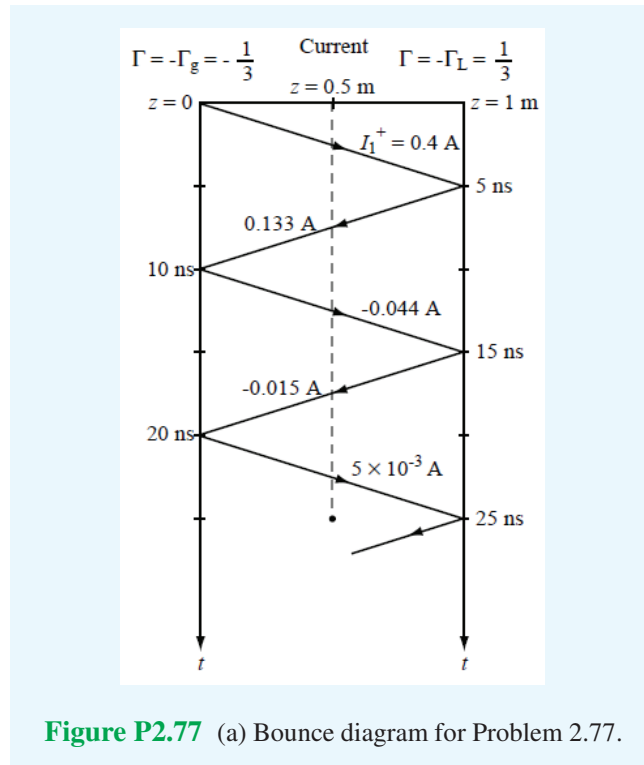
$$\Gamma_g = \frac{R_g - Z_0}{R_g + Z_0} = \frac{100 - 50}{100 + 50} = \frac{1}{3},$$

$$\Gamma_L = \frac{Z_L - Z_0}{Z_L + Z_0} = \frac{25 - 50}{25 + 50} = -\frac{1}{3}.$$

From Eq. (2.149a),

$$I_1^+ = \frac{V_g}{R_g + Z_0} = \frac{60}{100 + 50} = 0.4 \text{ A}.$$

The bounce diagram is shown in Fig. P2.77(a) and $I(t)$ in Fig. P2.77(b).



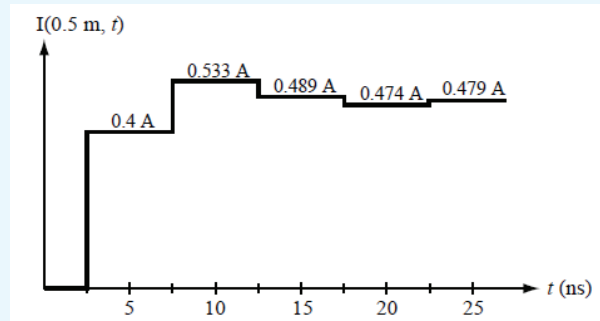


Figure P2.77 (b) Time response of current.