

**Special Problem 2.1-4**

For a certain transmission line,  $\beta = \pi/2$  (radians/m) and  $Z_0 = 50 \Omega$ .

We know that the total voltage at location  $z = -1 \text{ m}$  on this transmission line is:

$$V(z = -1) = j6 \text{ V}$$

the reflection coefficient function at location  $z = 1 \text{ m}$  is likewise:

$$\Gamma(z = 1) = -0.25$$

Determine the **total current** at location  $z = 0$  (i.e.,  $I(z = 0)$ ) on this transmission line.