Special Problem 2.3-8

Consider this terminated, lossless, transmission line:

\[ V(z) \quad Z_0 = 50 \Omega \quad \beta = \frac{\pi}{2} \text{ rad/m} \]

The voltage at \( z = 0 \) is known to be \( V(z = 0) = j3.0 \ V \):

Determine:

1. the complex functions \( V^+(z), V^-(z), \Gamma(z) \).
2. the complex functions \( V(z), I(z), Z(z) \).
3. the complex values \( V^+(z = -1), V^-(z = -1), \Gamma(z = -1) \).
4. the complex values \( V(z = -1), I(z = -1), Z(z = -1) \).