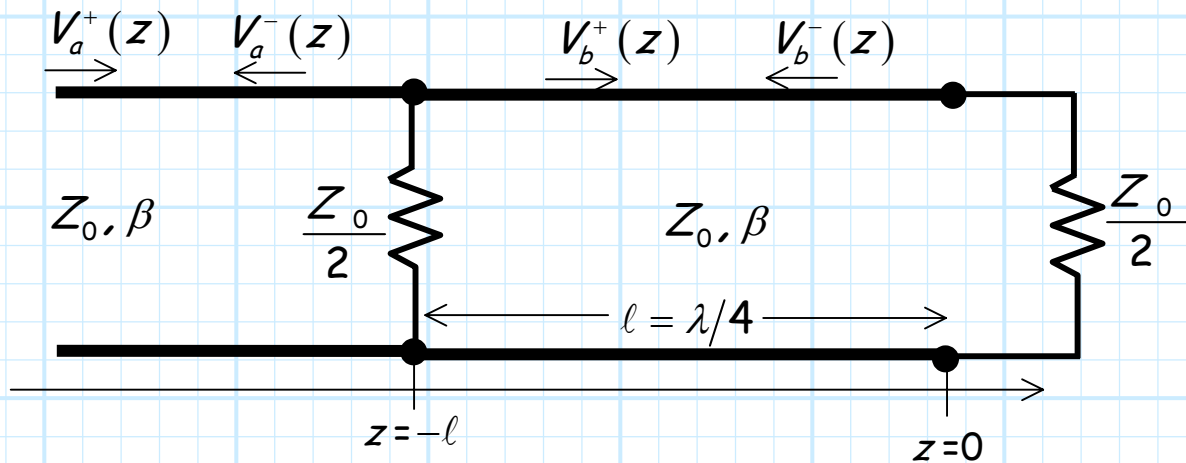


### Special Problem 2.3-2



The **total** voltage along the transmission line shown above is expressed as:

$$V(z) = \begin{cases} V_a^+ e^{-j\beta z} + V_a^- e^{+j\beta z} & z < -l \\ V_b^+ e^{-j\beta z} + V_b^- e^{+j\beta z} & -l < z < 0 \end{cases}$$

**Carefully** determine and apply boundary conditions at both  $z = 0$  and  $z = -l$  to find the three values:

$$\frac{V_a^-}{V_a^+}, \quad \frac{V_b^+}{V_a^+}, \quad \frac{V_b^-}{V_a^+}$$