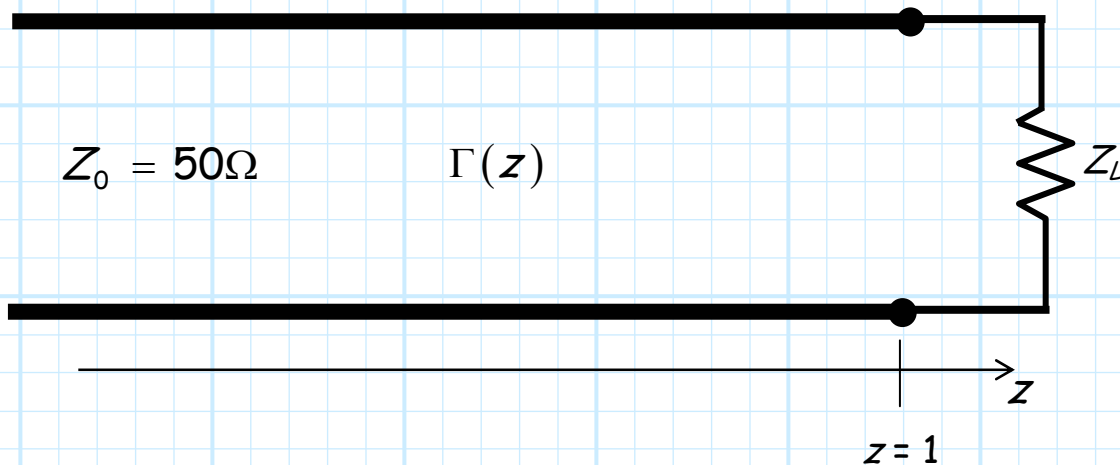


Special Problem 2.3-1

A transmission line of **unknown length** is terminated at location $z = 1$ m by an unknown load Z_L .

The characteristic impedance of this line is $Z_0 = 50\Omega$, and $\beta = \pi/4$ radians/meter.



Current $I(z)$ and voltage $V(z)$ exist on this line, but **all** we know is that:

$$\Gamma_0 = \Gamma(z = 0) = j0.25$$

Determine value of load Z_L .