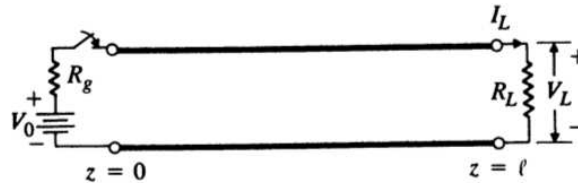


Problem 1 (10 Points) A DC source is applied at $t = 0$ as shown in the figure to a lossless line. Given that $R_L = 3R_0$, and $R_g = 2R_0$.

1. Find out what voltages will be produced on the line at different times, and what will be the final voltage as $t \rightarrow \infty$.
2. If the inductance per meter is L , capacitance C , then how much time will a pulse take to go from $z = 0$ to $z = \ell$ on this lossless line?



Problem 2 (10 Points) (1) Use the Smith chart to find the input impedance of a 50Ω lossless line that is 0.1 wavelength long and terminated at a short circuit. (2) A lossless transmission line of length 0.434λ and characteristics impedance 100Ω is terminated in an impedance of $260 + j180\Omega$. Find the voltage reflection coefficient, the standing wave ratio, and the input impedance.

