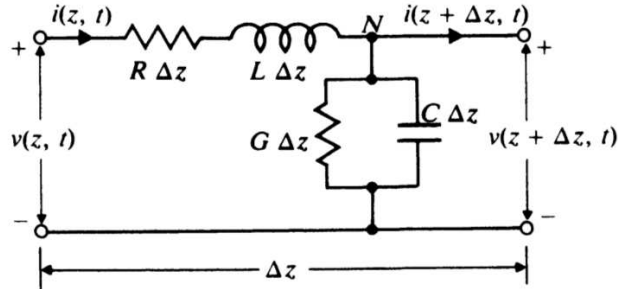
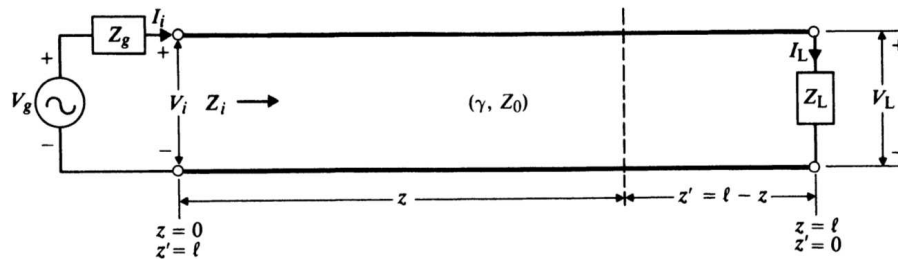


Problem 1 (15 Points) (a) Using the equivalent circuit of a differential length Δz of a two conductor transmission line, derive the partial differential equations for voltage and current in the transmission line.



- (b) Derive the two phasor equations for voltage and current.
- (c) Write the solution for the voltage and current in the transmission line, and also the formula for the characteristic impedance.

Problem 2 (10 Points) (a) For a finite transmission line of length ℓ terminated with a load Z_L , write the formula for the voltage V_L and current I_L using the solution for the transmission line equations.



- (b) Show that there will be no reflection if $Z_L = Z_0$.