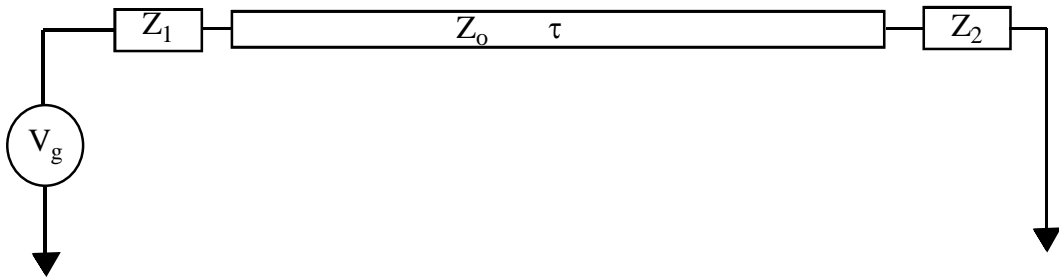


ECE 546 HOMEWORK No 3 Due Wednesday, February 17, 2016

1. Write a program that simulates the response (voltage at near and far ends) of a lossless transmission line terminated with linear resistive loads. Test your program using the example shown below . Use $Z_0 = 75 \Omega$, $\tau = 2.37 \text{ ns}$, $Z_1 = 50 \Omega$, $Z_2 = 1 \text{ K}\Omega$. Optimize your code to minimize run time. Show plots of the pulse response at the near and far ends of the line. Give a listing of your program.



The pulse characteristics for $V_g(t)$ are as shown in the figure below, with

time delay: $t_d = 1 \text{ ns}$

rise time: $t_r = 1 \text{ ns}$

fall time: $t_f = 1 \text{ ns}$

pulse width: $t_w = 20 \text{ ns}$

pulse amplitude: $V_{\text{max}} = 4 \text{ volts}$

