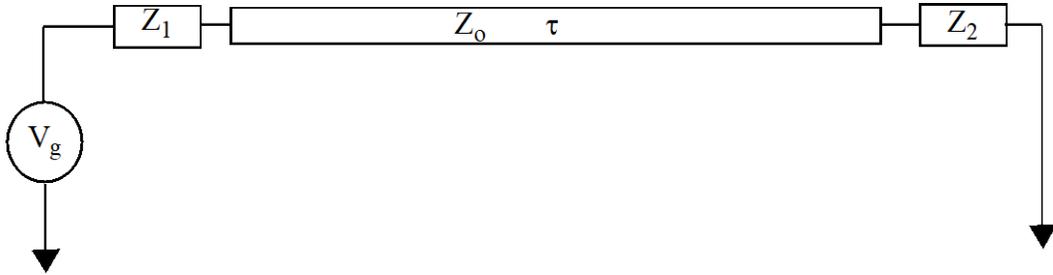


ECE 546 HOMEWORK No 3 - Due Friday, February 27, 2026

1. Using the **geometric series** approach, write a computer program that simulates the response at any location along a lossless transmission line terminated with linear resistive loads. Test your program using the example shown below. Use $Z_0 = 50 \Omega$, $l = 0.35\text{m}$, $Z_1 = 25 \Omega$, $Z_2 = 50 \text{ k}\Omega$. Show plots of the pulse response at the middle 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: $V_{\text{max}} = 4 \text{ volts}$

