ADS Homework

Guidelines:

1. Solve this problem using Keysight ADS software.
2. Submit the simulated Result via Canvas as a class performance (October 27th)

Problem:

Show graphically in ADS the changes in reactance, magnitude voltage and magnitude current with respect to line length, for an ideal transmission line that is terminated in a short circuit.

Strategy

Use the ideal transmission model within ADS and connect to a 2-volt voltage source with 50-Ohm generator impedance. Terminate the line in a short circuit and use node voltages to find the changes in reactance, voltage and current along the transmission line with respect to electric length.

$$Z_{in} = Z_o \frac{Z_L + jZ_o \tan \beta l}{Z_o + jZ_L \tan \beta l}$$

The simulation setup will look like this:
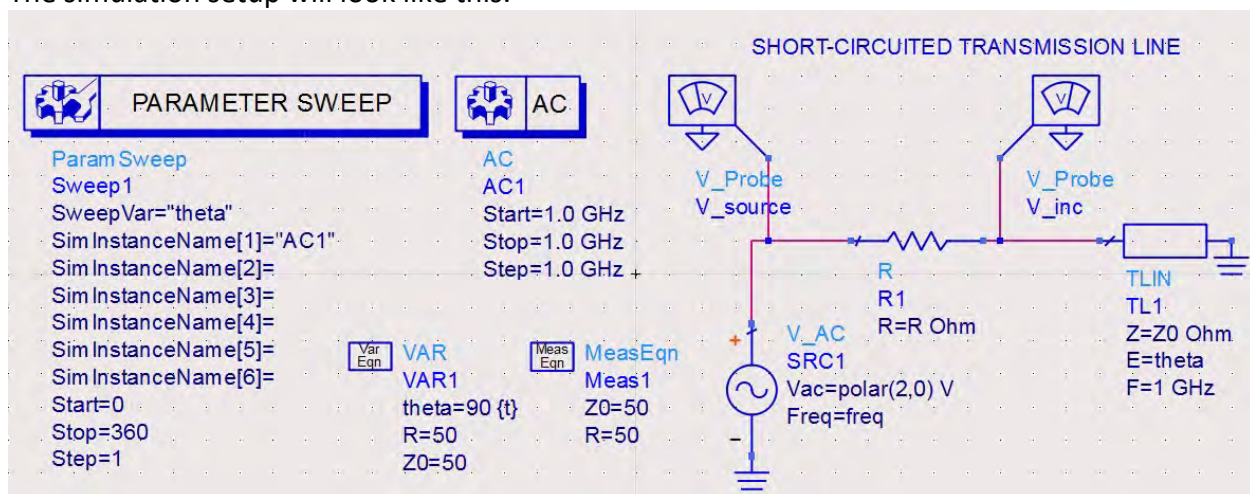
The outcome should be similar like this: