Name:

Homework 7, due Friday 9/20/2013.

Problem 1: The magnitude of the maximum voltage in a lossless transmission line is 3V and the minimum voltage is 1.2V. What is the magnitude of the load's reflection coefficient?

Problem 2: The load impedance connected to a lossless transmission line is 5-j10 Ω . For what value of the characteristic impedance of the transmission line (Z₀) the voltage standing-wave ratio is minimum?

Problem 3: The load impedance connected to a lossless transmission line is 50-j100 Ω . The characteristic impedance of the transmission line (Z₀) is 100 Ω . The length of the transmission line 6 cm. Calculate the load's reflection coefficient and the standing wave ratio. Approximately at what frequency range the lumped circuit assumption fails for this circuit?