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EE214000 Electromagnetics, Fall 2012

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Quiz #3, Open books, notes (15 points)

1. What is the length of the transmission line corresponding to one perimeter (the length of a circle) of the Smith Chart? (2 points)

2. Given an SWR circle for a transmission line and a phase angle of the load impedance on the Smith Chart at $\theta_\Gamma = \pi/4$, what are the locations of the first voltage maximum (3 points) and the first voltage minimum (3 points) on the transmission line (in units of wavelength from the load.)

3. Given an SWR circle for a transmission line, how do you read the standing wave ratio from a Smith Chart? Sketch a Smith Chart to illustrate your answer. (3 points)

4. Given an open circuit load impedance for a transmission line, mark its location (2 points) and the corresponding admittance value (2 points) on a Smith Chart.