ECEn 560
Electromagnetic Wave Theory

Homework #17
Due March 22, 2016 (may be turned in late for half credit)

1. Estimate the voltage induced across the open circuited terminals of a one meter length dipole antenna by a second dipole radiating 50 kW total power from 80 km away at 1160 kHz. Solve the problem in two ways: (a) using the Thevenin equivalent, and (b) using effective area. (c) What is the voltage across a $50\,\Omega$ load placed across the antenna terminals?

2. Look up "Green's second identity." Is there a connection between this identity and Green's functions (other than that they are both named after the mathematician George Green)? Green's second identity involves two functions. What happens if you replace one of them with a Green's function for Poisson's equation, and the Laplacian of the other with the right hand side of Poisson's equation?