EE 483/583 Antennas for Wireless Communications (Spring 2026)
Homework 6
Wednesday, February 25, 2026

1) 4.2 First, find the vector magnetic potential $\bar{A}$ in spherical coordinates.
2) 4.18d
3) 4.25c As part of your solution, compute radiation R_r and loss R_L resistances using equations from text **and** <u>again</u> using NEC-2 (show input file and relevant parts of output). Compare answers. You do not need to use program **Dipole**.
4) 4.33
5) 4.39
6) 4.46 Let $\ell/a = 64$. Do NOT ignore the reactance in this case (Hint: See 4-70a, 8-60b). For part (a) Also, find radiation reactance. Check/compare with results using NEC-2 assuming f = 299.8 MHz. Note: You may use MathCad, Matlab, … instead of computer program at end of chapter for analytic results.
7) 4.61 with a λ/5 monopole. For part b), check analytic answer [Hints: (4-67), (4-70), &/or (4-79)] versus NEC-2 answer [assume $a = 0.001\lambda$ and f = 299.8 MHz]. c) 'Resonant' implies we will assume $X_{ant} = 0$.
8) **EE 583 only**: 4.10b

Due Monday, March 2, 2026.