UNIVERSITY OF TEXAS AT DALLAS
Department of Electrical Engineering

EE 6390 - Introduction to Wireless Communications Systems
Problem Set #2: Path Loss and Shadowing

Date assigned: 1/17/2008
Date due: 1/24/2008

Late homework will not be accepted. Please check the course web site for updates.

Reading: *Wireless Communications*, ch. 2-3

Please use MATLAB to help you solve these problems, check answers, etc.

Problem 2.1 Distance prediction for receiver performance
P2.13 in *Wireless Communications*

Problem 2.2 Path Loss Simulation
P2.20 in *Wireless Communications*

Problem 2.3 Log-Normal Path Loss Model

Assume a SNR of 25 dB is desired at the receiver. If a 900 MHz cellular transmitter has an EIRP of 100 W, and the AMPS receiver uses a 0 dB gain antenna and has a 10 dB noise figure, find teh percentage of time that the desired SNR is achieved at a distancce of 10 km from the transmitter. Assume $\gamma = 4$, $\sigma = 8$ dB, and $d_0 = 1$ km.