

ENEE 380. Homework #4

4/1/03 due 4/10/03

(1) Cheng Problem (4.1)

(2) Cheng Problem (4.3)

(3) Cheng Problem (4.6)

(4) Cheng Problem (4.7)

(5) Cheng Problem (4.8)

(6) Cheng Problem (4.9)

(7) Cheng Problem (4.11)

(8) Cheng Problem (4.14)

(9) Cheng Problem (4.16)

(10) Analyze the image charge problem in Section 4-4.4 graphically. With the aid of Mathcad, Matlab, or whatever, plot the equipotential surfaces for the situation as more and more image charges are added. Start with 1 image charge, 2,3, and so on. How many image charges are necessary to come close to the correct equipotentials for sphere and ground plane? Pick any reasonable parameters for charge and size.