

PHY 106 Test 3 July 14, 2005 20 minutes

La Salle University

Dr. R. DiDio

1. Two speakers, separated by 1.0 m, are fed with the same sinusoidal wave of 440 Hz. A microphone is 5.0 m away along a line bisecting the line connecting the speakers.
 - a) If the microphone is moved along a line parallel to the line containing the speakers, where will the first minima occur?

 - b) Where will the first maxima occur?

2. How far apart must two protons be for the force on each other to be the same as the weight of one proton on the surface of the earth?

3. In the following diagram, the plates individually produce electric fields of 0.25 N/C
 - a) What is the surface charge density on each plate?

 - b) Determine the total electric field (magnitude and direction) at point P.