Universidad de Puerto Rico
Recinto Universitario de Mayagüez
Departamento de Ingeniería Eléctrica y Computadoras

INEL 4151 Asignacion #2: Semana de lunes 2 de septiembre de 2013.

Nombre:_____ Sección:_____

1. Plane $x + 2y = 5$ carries charge $\rho_S = 6$ nC/m^2. Determine **E** at (-1, 0, 1).

2. A uniform line charge density of 10 nC/m is positioned at x = 0, y = 2, while another uniform line charge density of -10 nC/m is positioned at x = 0, y = -2. Find **E** at the origin.

3. Determine the charge density due to each of the following electric flux densities:
   a. $\mathbf{D} = 8xy\,\mathbf{a}_x + 4x^2\,\mathbf{a}_y$ C/m^2
   b. $\mathbf{D} = 4\rho \sin\phi\,\mathbf{a}_\rho + 2\rho\cos\phi\,\mathbf{a}_\phi + 2z^2\,\mathbf{a}_z$ C/m^2
   c. $\mathbf{D} = (2\cos\theta)/r^3\,\mathbf{a}_r + (\sin\theta)/r^3\,\mathbf{a}_\theta$ C/m^2