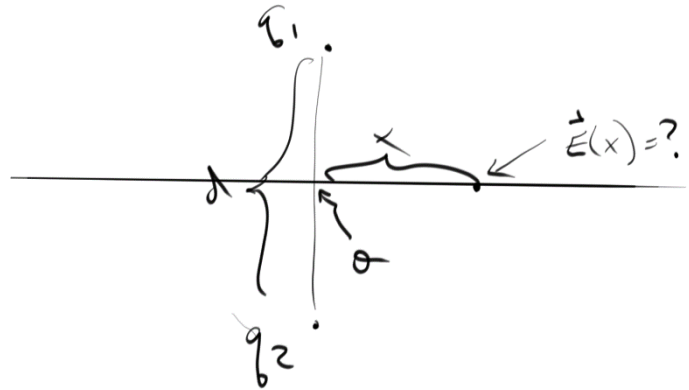


## Physics 2B Quiz Set 2 (finding and using the electric field)

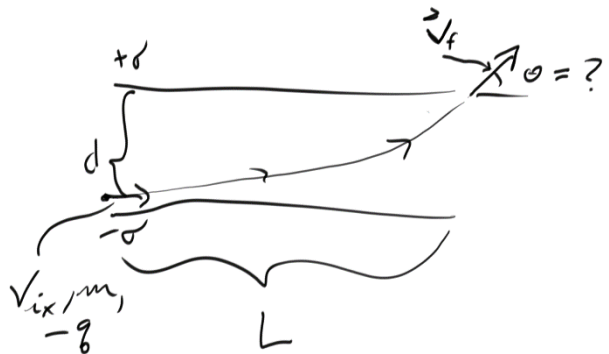
1. Two equal positive charges are held fixed and separated by distance  $D$ . Find the electric field vector along their perpendicular bisector. Then find the position relative to their center, along the  $x$  axis, where the field is a maximum.



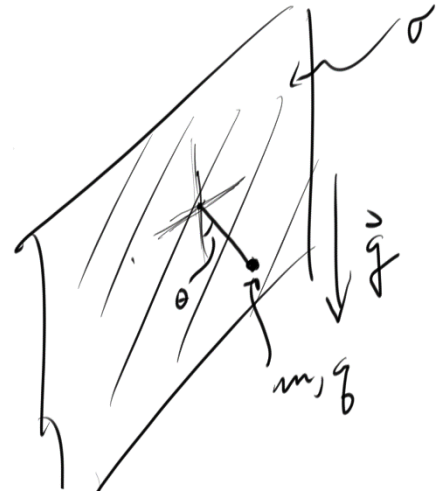
2. Two point charges are separated by a distance,  $D$ . Find the points along the line passing through them where the  $E$  field is zero.

3. Find the  $E$  field along the axis of a circular ring of charge. Radius  $R$  and total charge  $Q$ .

4. A charge passes through a region where the  $E$  field is uniform as shown in the diagram. Find the angle of the exit velocity.



5. A point mass,  $m$ , that has a charge,  $q$ , is attached to a string of length where the other end is attached to an infinite charged sheet. The mass is in equilibrium. There is gravity in this problem. Find the charge density of the sheet.



6. Find the electric field along the perpendicular bisector of a dipole.

7. Find the value read by a “bathroom” scale (it measures the normal force) that is held fixed between two parallel sheets of opposite charge, charge density given, and equal area  $A$ .

