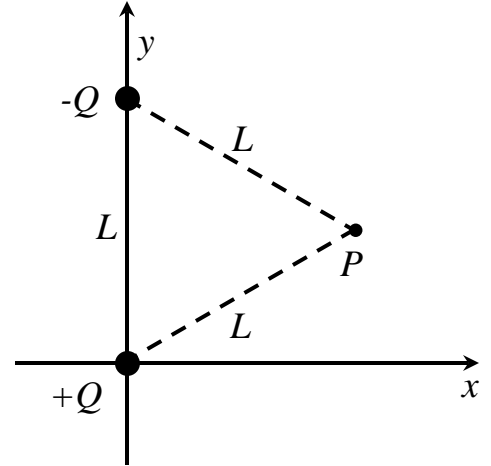


## Physics 2135

## Special Homework Assignment #1

1. A point charge  $+Q$  is located at the origin, and a point charge  $-Q$  is located at  $(x,y) = (0,L)$ .

(a) Find the electric field at point  $P$ , which is a distance  $L$  away from both  $+Q$  and  $-Q$ , as shown in the diagram. Express your answer in **unit vector notation** using the coordinate system given.



(b) A point charge  $-2Q$  is placed at point  $P$ . Find the Coulomb force on the charge  $-2Q$  due to the other two charges. Express your answer in **unit vector notation** using the coordinate system given.