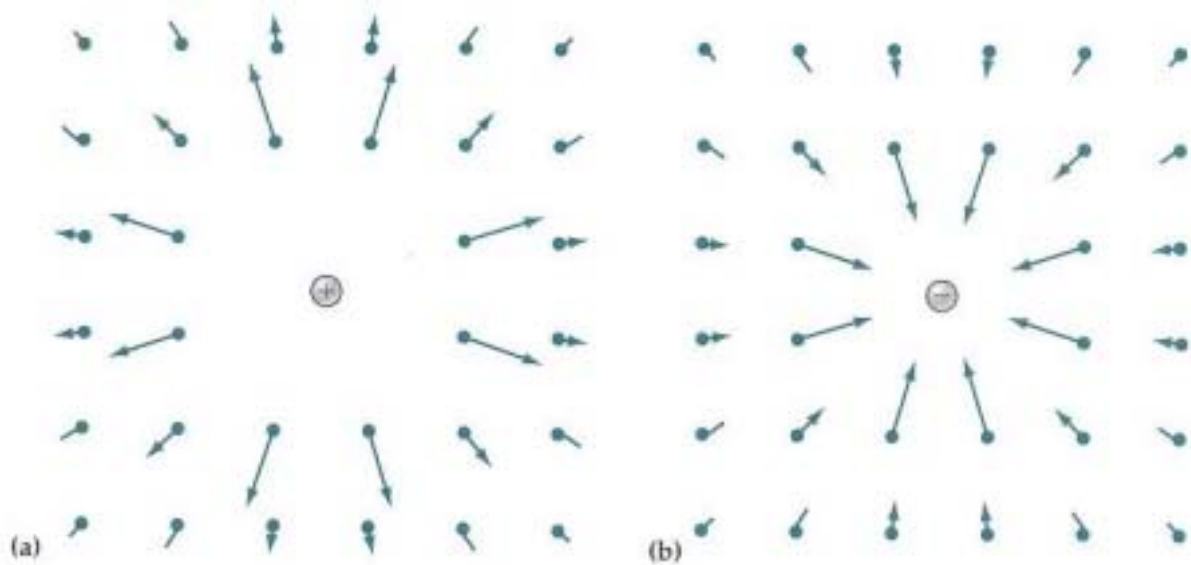


## Ex. Vector Fields for Point Charges

The electric field for a point charge is  $\mathbf{E} = \frac{k_e Q}{r^2} \hat{\mathbf{r}}$ .



### NOTICE:

- I. The directions are all away (*a*) or toward (*b*) the sources. The vectors point in the direction a positive charge (+*q*) would move if placed in that field.
- II. The vector lengths get longer the closer they get to the source and smaller the further away. This means the field is strongest close to the source and weaker the further away.