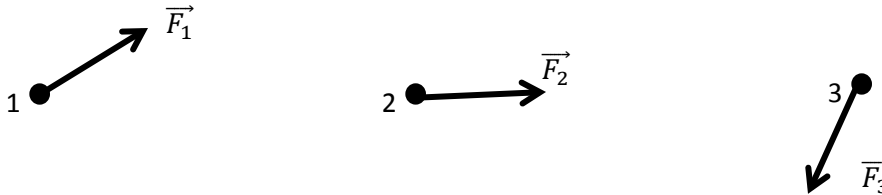


Electric field examples

Example 1

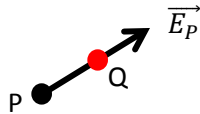
The electric force on a charge q at 3 points 1, 2 and 3 is given in the figure below.

- What is the electric field at these 3 points? If you don't have all of the needed information, state what piece of information is missing.
- What would be the force on a $-q$ and a $2q$ charges at these same points?



Example 2

- The electric field at a point P is given below. What is the electric field at Q?

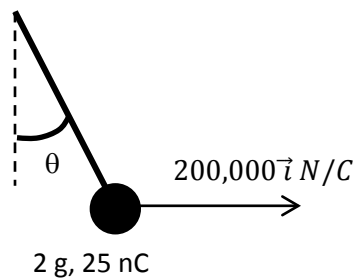


- Can the electric field be as depicted below?



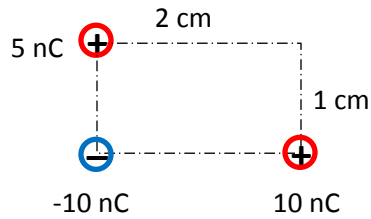
Example 3

A 2g ball is given a 25 nC charge. The ball is hanged at the end of a string and is placed in a $200,000\vec{i}$ N/C electric field. Find the angle θ between the string and the vertical.



Example 4

3 charges are placed at the 3 corners of a rectangle. Find the electric field at the upper right corner.



Example 5

An electric dipole is made of two charges $-q < 0$ and $+q > 0$ that are placed at $x = -d/2$ and $x = +d/2$ on an x-axis. Find the electric field on the x-axis far away from the dipole.



Example 6

Find the electric field at a point P created by a line of charge Q and length L as shown below.

What is the field as $L \rightarrow +\infty$?

