

Name: _____

Date: _____

Electric Field

1. Sketch a diagram of an electric field created by a positive charge.

2. Sketch a diagram of an electric field created by a negative charge that is relatively stronger than the charge in question 1.

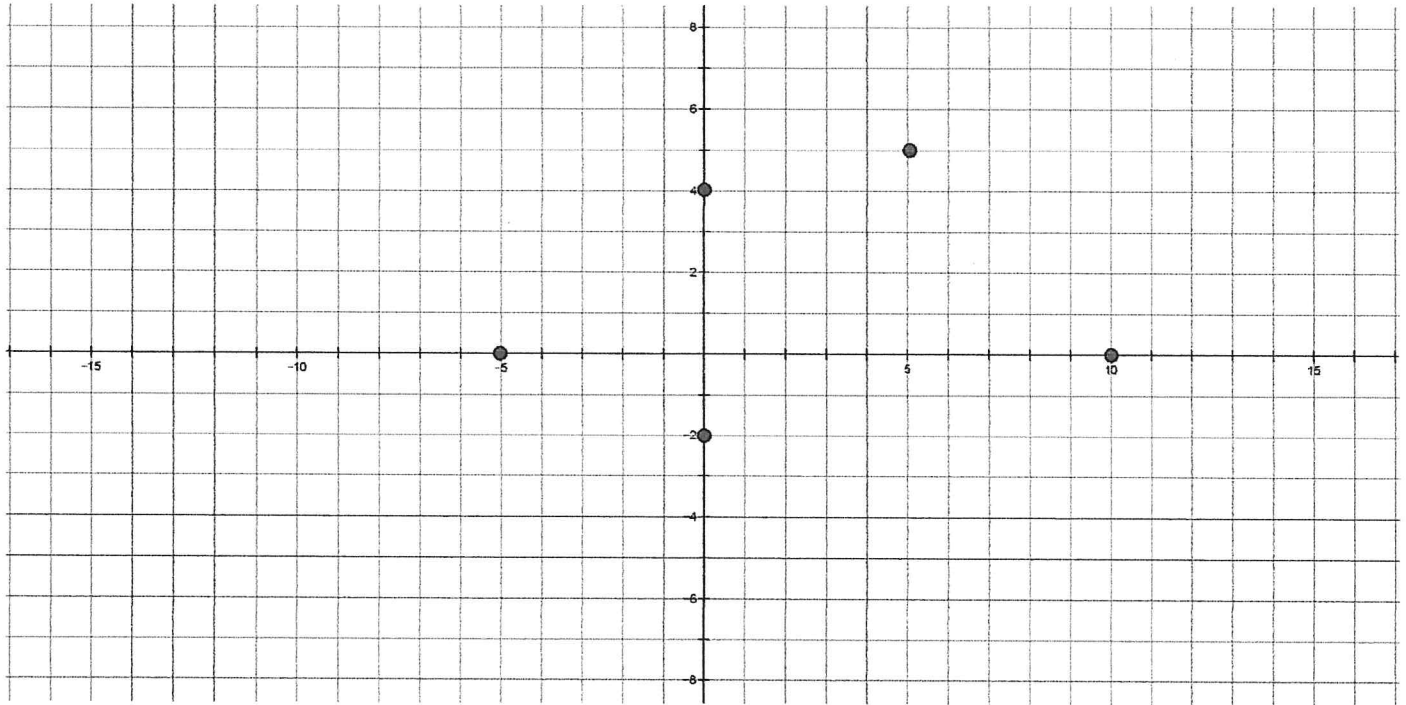
3. Sketch a diagram of an electric field created by a dipole.

4. Sketch a diagram of an electric field created by two positive charges with the same magnitude.

5. Assume that there is only one charge placed at the origin of the coordinate system.

a) Use symmetry to show the strength of the electric field at as many points as you can without making any calculations. Use vectors to show relative strength of the electric field at all given points as well as the point you chose by symmetry.

Electric field at $(-5,0)$ is 9000 N/C [left], it is 2250 N/C [right] at $(10,0)$, 56250 N/C [down] at $(0,-2)$, 14062.5 N/C [up] at $(0,4)$, 4500 N/C [right 45° up] at $(5,5)$.



b) Is the charge creating the electric field positive or negative? Justify your answer.

c) What is the magnitude of the charge?

d) What assumptions did you make while calculating the magnitude of the charge?