

Practice Problem from § 4 - Electrostatics

CLASSICAL ELECTRODYNAMICS I - PHY841 - Prof. Pratt

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Three charges are located at $-a\hat{y}$, $+a\hat{y}$, and $+a\hat{z}$ with charge $-q$, $-q$, and $+q$, respectively. See Figure 1 for a graphical representation.

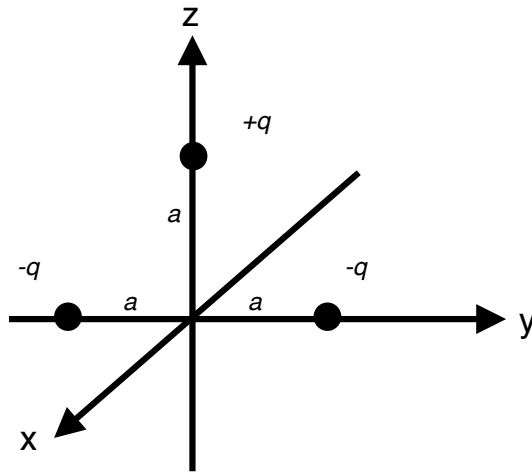


FIG. 1. This is what it looks like.

(a) - Find the electric potential a distance far away from the origin. Consider up to the first two non-zero components of the multipole expansion.

(b) - Using the electric potential found in (a), compute the electric field in spherical coordinates.