

57. We note that the contributions to the field from the pair of $-2q$ charges exactly cancel, and we are left with the (opposing) contributions from the $4q$ (at $r = 2d$) and $-q$ (at $r = d$) charges. Therefore, using $k = 1/4\pi\epsilon_0$

$$|\vec{E}_{\text{net}}| = k \frac{4q}{(2d)^2} - k \frac{q}{d^2} = 0 .$$

The net field at P vanishes completely.