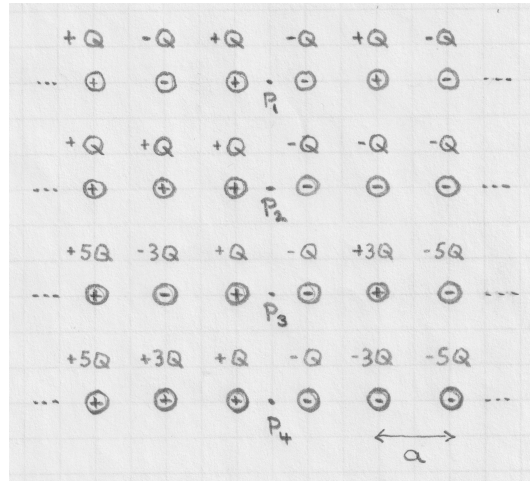


[lex128] Electric field generated by linear arrays of point charges

Consider the four linear arrays, infinite in both directions, of equidistant point charges as shown. Calculate the strengths E_1, E_2, E_3, E_4 of the electric field at points P_1, P_2, P_3, P_4 , respectively, midway between a positive and a negative charge as shown. Find exact numbers for the four fields in units of $8Q/4\pi\epsilon_0 a^2$.



Solution: