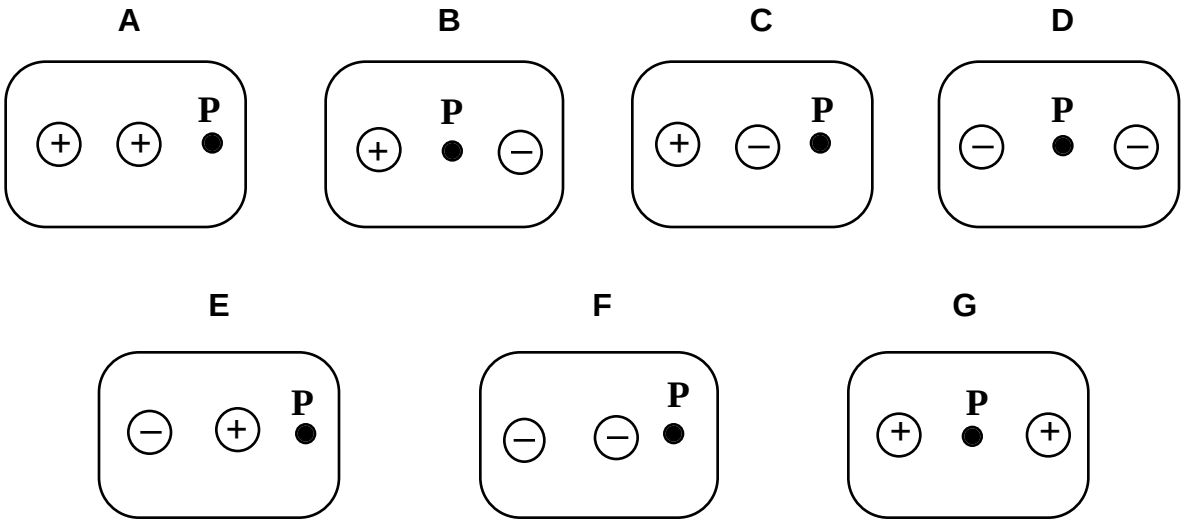
Two Electric Charges—Electric Field Along Line [143]

Given below are seven arrangements of two electric charges. In each figure, a point labeled P is also identified. All of the charges are the same size, Q, but they can be either positive or negative. The charges and point P all lie on a straight line. The distances between adjacent items, either between two charges or between a charge and point P, are all x cm. There is no charge at point P, nor are there any other charges in this region.

Rank these arrangements from greatest to least on the basis of the strength of the electric field at point P. That is, put first the arrangement that produces the strongest field at point P, and put last the arrangement that produces the weakest field at point P.



Strongest 1 _____ 2 _____ 3 _____ 4 _____ 5 _____ 6 _____ 7 _____ Weakest

Or, all of these arrangements produce the same strength field at P.____

Or, all of these arrangements will produce zero field at P. _____

Please carefully explain your reasoning.

How sure were you of your ranking? (circle one)

Basically Guessed				Sure					Very Sure
1	2	3	4	5	6	7	8	9	10

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