Three Linear Electric Charges—Electric Force[127]

Given below are arrangements of three fixed electric charges. In each figure, a point labeled P is also identified. All of the charges are the same size charge, *q*, but they can be either positive or negative as indicated. 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 the same. There are no other charges in this region. A test charge, +*Q*, is placed at point P.

Rank these arrangements from greatest to least on the basis of the strength (magnitude) of the electric force on the test charge, +*Q*, at P.

A

B 

C 

D 

E 

F 

Greatest 1 _____ 2 _____ 3 _____ 4 _____ 5 _____ 6 _____ Least

Or, all of these arrangements exert the same magnitude force on the +*Q* test charge. _____

Or, all of these arrangements will exert zero force on the +*Q* test charge. ___

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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