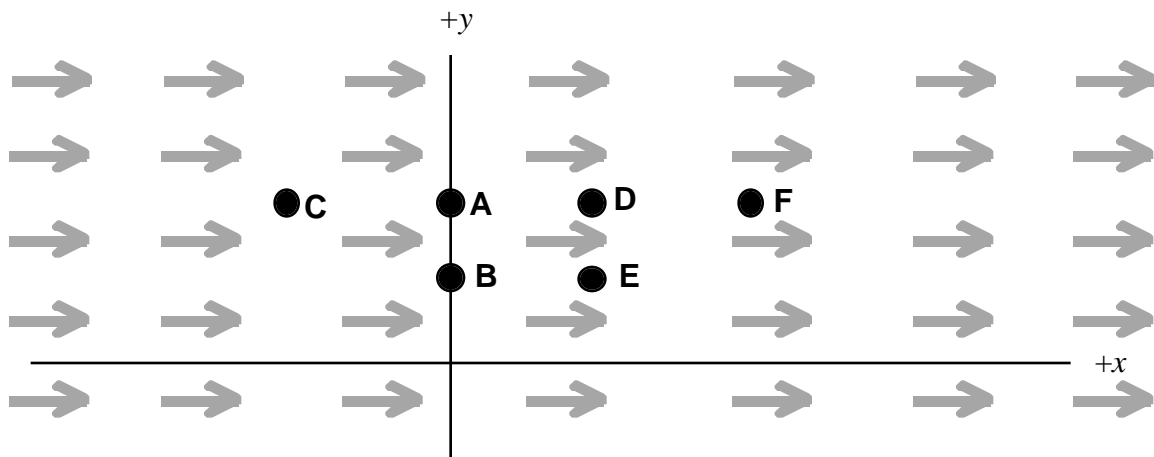


Uniform Electric Field—Electric Force on Charge at Rest II ¹⁴⁰

We have a large region of space that has a uniform electric field in the $+x$ direction (\Rightarrow) as indicated by the arrows in the diagram below. At the point $(0,0)$ m, the electric field is 30 i N/C and the electric potential is 100 volts.

Rank from greatest to least the strength (magnitude) of the electric force on a $+5 \text{ C}$ charge when it is placed at rest at each of the following points.

A: $(0, 6) \text{ m}$ **B:** $(0, 3) \text{ m}$ **C:** $(-3, 6) \text{ m}$ **D:** $(3, 6) \text{ m}$ **E:** $(3, 3) \text{ m}$ **F:** $(6, 6) \text{ m}$



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

Or, the 5 C charge will experience the same strength electric force at all of these points. _____

Or, the 5 C charge will not experience a force at any of these points. _____

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

¹⁴⁰ C. Hieggelke