

Diagram for Ch 9 #54:



The dipole is the two charges, $-q$ and $+q$, at the left.

When Q is placed at x , it experiences a force directed away from the dipole (because the $+q$ charge is closer to it than the $-q$ charge).

Assume that the dipole remains at $x=0$, and only Q moves from x_1 to x_2 .

(The distance d between them is not important for this problem other than it being a constant in the equation for the force on Q due to its interaction with the dipole. The other variables that are constant are K , q , and Q .)