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Student:

**Electric Charges and Coulomb's Law****Numerical Problem**

Question:

Two charged particles are placed on the x-axis: one with a charge of  $+4 \times 10^{-6}$  C at  $x=0$ m, and the other with a charge of  $-2 \times 10^{-6}$  C at  $x=3$ m. Calculate the force exerted between these two charges. Is the force attractive or repulsive?

**Conceptual Question**

Scenario:

On a dry winter day, you notice that when you comb your hair, the strands of hair tend to stand apart and even stick to the comb. This phenomenon becomes more pronounced the more you comb.

Question:

Explain why your hair stands on end and sticks to the comb after combing, especially in winter. Consider the concepts of electric charges, the transfer of electrons, and how the electric field is involved in your explanation.