Concept Question: Changing Dimensions

A parallel-plate capacitor has plates with equal and opposite charges ±Q, separated by a distance *d*, and **is not** connected to a battery. The plates are pulled apart to a distance $D > d$. What happens?

1. V increases, Q increases
2. V decreases, Q increases
3. V is the same, Q increases
4. V increases,Q is the same
5. V decreases, Q is thesame
6. V is the same, Q is the same
7. V increases, Q decreases
8. V decreases, Q decreases
9. V is the same,Q decreases

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Concept Question: Changing Dimensions

A parallel-plate capacitor, disconnected from a battery, has plates with equal and opposite charges, separated by a distance *d*.

Suppose the plates are pulled apart until separated by a distance $D > d$.

How does the final electrostatic energy stored in the capacitor compare to the initial energy?

1. The final stored energy is smaller
2. The final stored energy is larger
3. Stored energy does not change.

8.02SC Physics II: Electricity and Magnetism

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