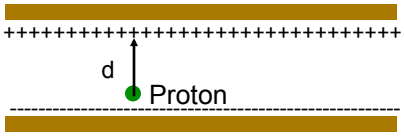
A proton is moved UP in this capacitor with constant speed by an external force (like a tweezer) The sign of the work done by the external agent (the tweezers) is … ?

A: + B: - C: zero
D: Not enough info



$$\vec{\mathbf{E}} = \vec{\mathbf{F}} / q$$

$$\mathbf{E} = kQ / r^2$$ near a point charge Q

$$\mathbf{E} = \text{constant}$$ in a capacitor

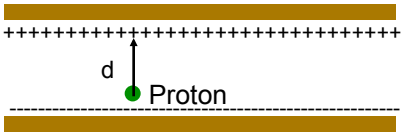
Change in potential energy is :

$$\Delta PE = +W_{ext} = -W_{field}$$

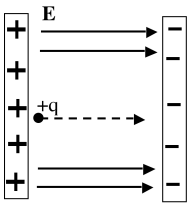
If we define PE(proton) = 0 at the bottom plate, then PE(proton) near the top is...

A: + B: - C: zero

D: Not enough info



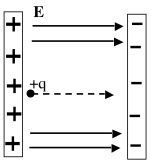
A positive test charge +q is carefully moved by some external agent at constant speed between two capacitor plates, as shown.



Think about the work done by the E field, and by the external agent (and overall, or "net" work)

The work done by the agent, done by the electric field, and done by the ***net force*** on the book are:

	Agent	E-Field	Net Force
A	+	-	+
B	-	+	-
C	-	+	**0**
D	+	-	**0**



E: None of these/I wish I knew

A small positive test charge is initially at rest in an electric field, and is free to move.

Which way will the charge start to move?

A: Moves towards *higher* Voltage (also known as potential, or just V).

B: Moves towards *lower* Voltage.

C: Not enough information given.

A small *negative* test charge is initially at rest in an electric field, and is free to move.

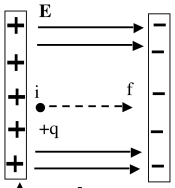
Which way will the charge start to move?

A: Moves towards *higher* voltage (or "potential", or "V").
B: Moves towards *lower* potential. (V)
C: Not enough information given.

A *positive* charge q is released from position i to position f between the plates of a charged capacitor.

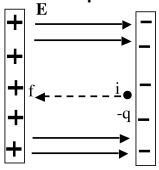
Did the pot. energy (PE) increase or decrease?

Did the voltage (V) at the position of the test charge increase or decrease?



A: PE ↑, V ↑
B: PE ↑, V ↓
C: PE ↓, V ↑
D: PE ↓, V ↓
E: None of these.

A negative charge -q is released from position i to position f between the plates of a charged capacitor.



Did the pot. energy (PE) increase or decrease?

Did the voltage (V) at the position of the test charge increase or decrease?

A: PE ↑, V ↑ B: PE ↑, V ↓

C: PE ↓, V ↑ D: PE ↓, V ↓

E: None of these.