- Do you remember the physics definition of "work"?
- Do you remember how work is related to energy?

A) Yes, and Yes
B) Yes and No
C) No, and Yes
D) No and No

Read Ch 6 for review!

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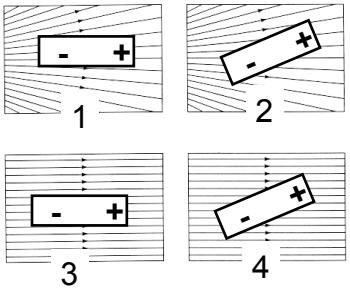
A dipole is placed in an external field. In which situation(s) is F(net) on the dipole zero?

A) 1 only
B) 2 only
C) 1 and 2
D) 3 and 4
E) 2 and 4



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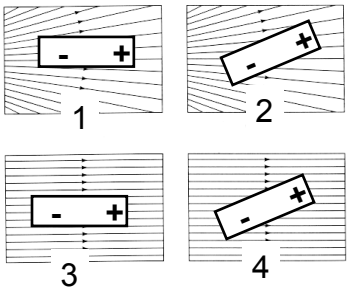
A dipole is placed in an external field. In which situation(s) is the torque on the dipole zero?

A) 1 only
B) 2 only
C) 1 and 2
D) 3 and 4
E) 2 and 4



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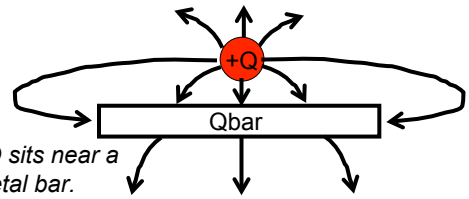

+Q sits near a metal bar.

What can you say about the magnitude of the net charge on the bar |Qbar|, compared to that of the point charge?

A: |Qbar| > Q B: |Qbar| =Q C:|Qbar| < Q
D: Not sure/not enough info

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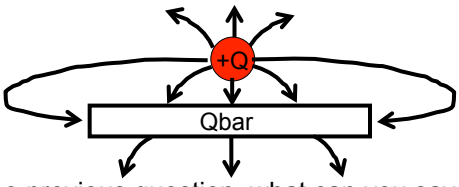

In the previous question, what can you say about the net charge on the bar? Qbar…

A: = 0

B: > 0 (the bar has a net + charge)

C: < 0 (the bar has a net - charge)

D: Not enough info/not sure.

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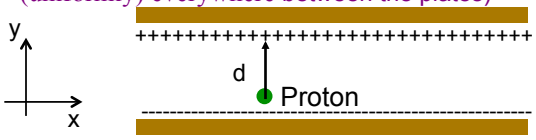
Two parallel conducting plates (a capacitor) are charged as shown. A proton is lifted (at constant speed) by an external agent (tweezers) a distance d as shown. Ignore gravity in this problem.

(There is a uniform E- field , pointing DOWN (uniformly) everywhere between the plates)



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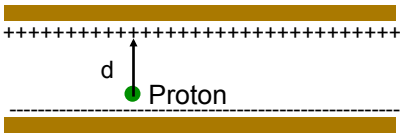
What direction is the force on the proton due to the E-field in the capacitor?

A: up B: down C: zero



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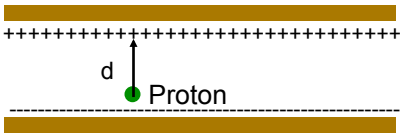
The sign of the work done by the E-field as the proton is moved upwards is…?

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



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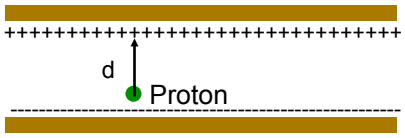
The sign of the work done by the external agent (the tweezers) is … ?

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



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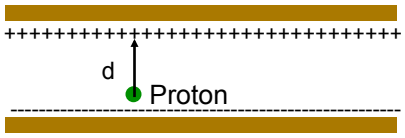
Change in potential energy is :

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

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

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



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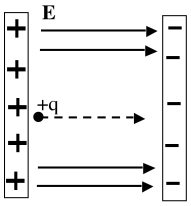
A positive test charge +q is carefully moved by some external agent at constant speed between two capacitor plates, as shown.



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

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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

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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 (potential, V).

B: Moves towards *lower* Voltage.

C: Not enough information given.

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