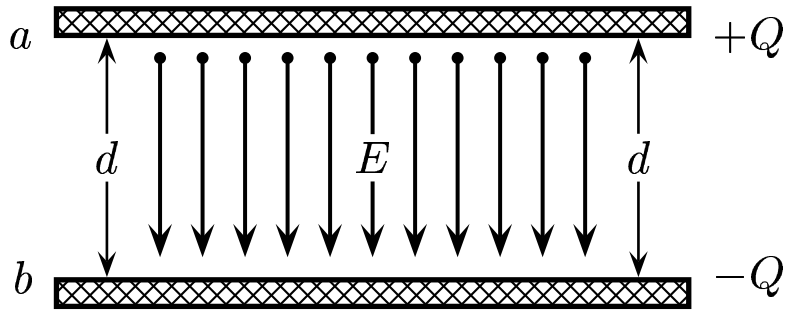


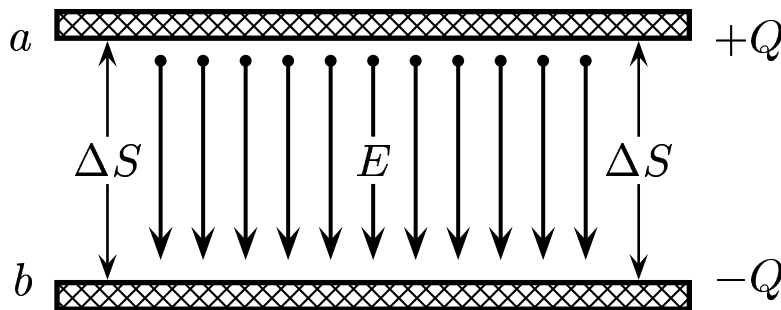
Two plates a and b are separated by a distance d . The “plate charge” is Q . Between the gap E is constant.



Find the potential difference $\Delta V_{ba} = V_a - V_b$.

- A) $\Delta V_{ba} = E d$
- B) $\Delta V_{ba} = -E d$
- C) $\Delta V_{ba} = \frac{E d}{2}$
- D) $\Delta V_{ba} = -\frac{E d}{2}$

From the sketch, $\Delta V_{ba} = V_a - V_b = -E \Delta S \cos 180^\circ = E d$.



An independent check, we recall that the natural tendency for a positive charge is to move along E . So $V_a > V_b$. The sign is therefore correct.

Answer **A**.