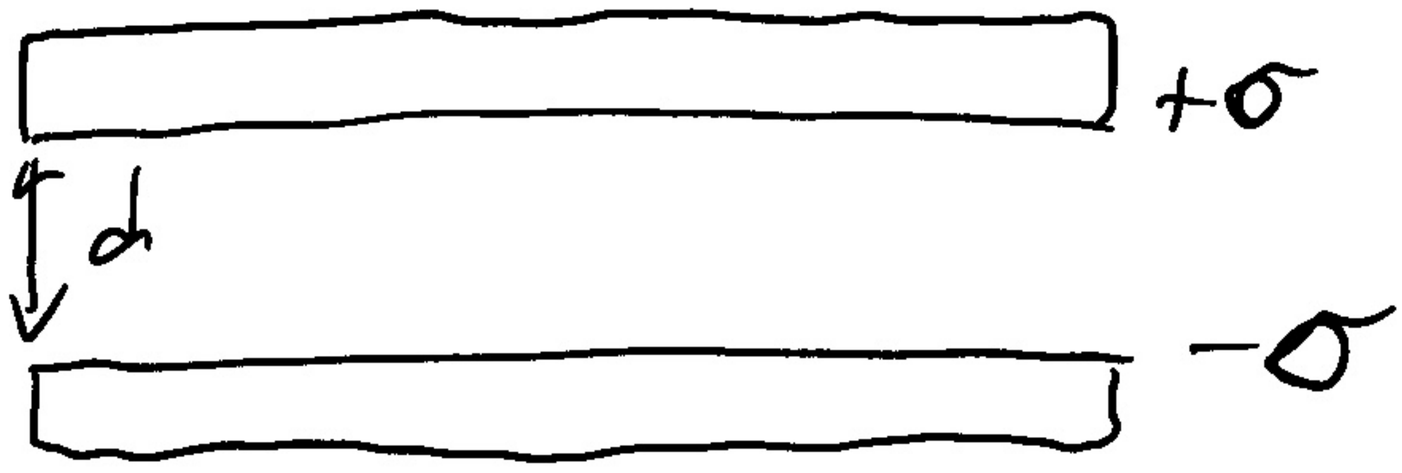
Working toward new point of view.

Previous View:

① Specify charge

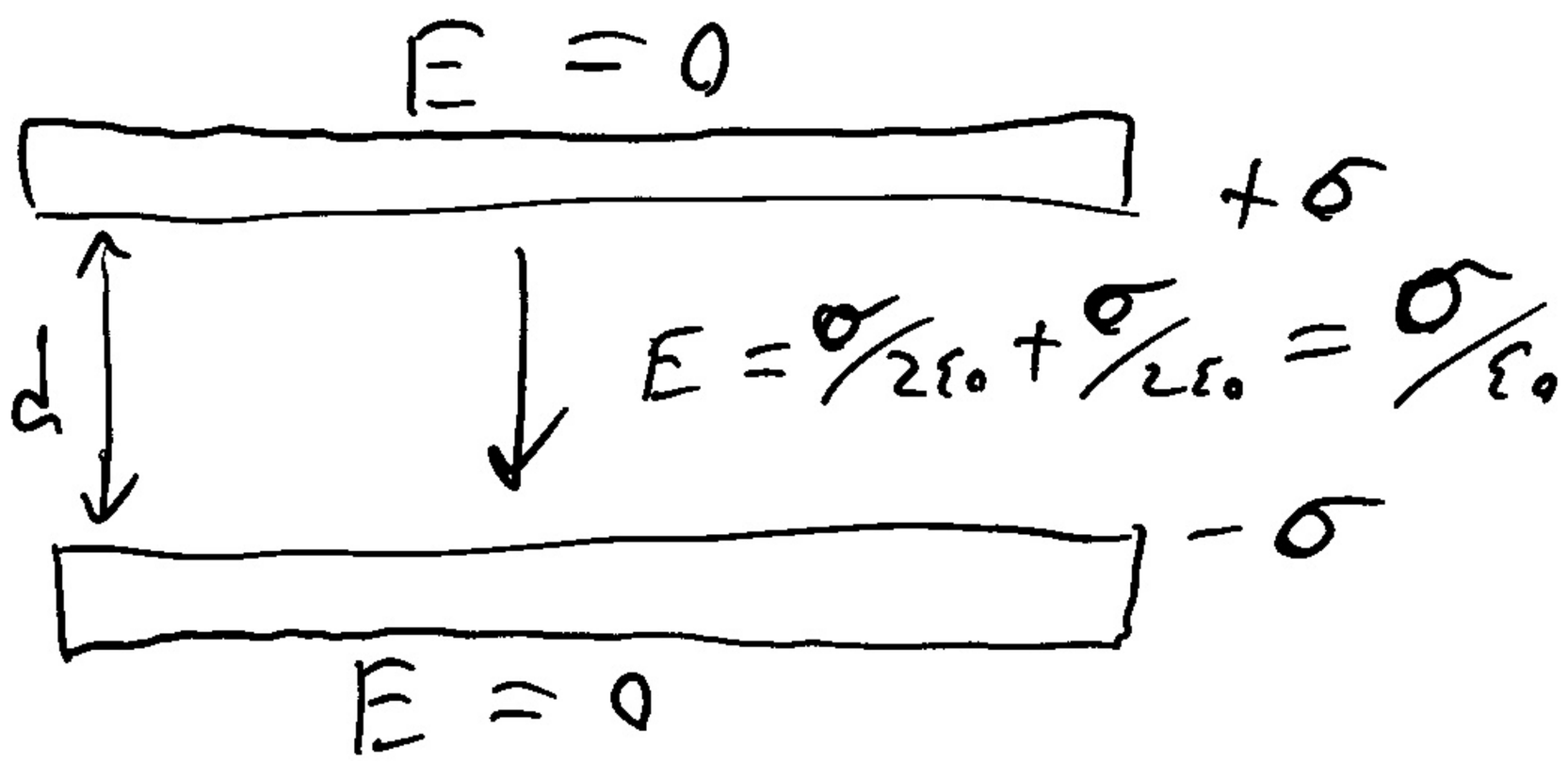
② Compute $\vec{E}$ & $V$

E.g.




- Field of $+\sigma$ = $\sigma/2\varepsilon_0$ out from + sheet

- Field of $-\sigma$ = $\sigma/2\varepsilon_0$ in towards − sheet



$$\Delta V = -\int \vec{E} \cdot d\vec{\ell}$$

$$= -\int_0^d E_z \, dz$$

$$= -E_z d = \boxed{\sigma/\varepsilon_0 \, d}$$

+ sheet at higher potential

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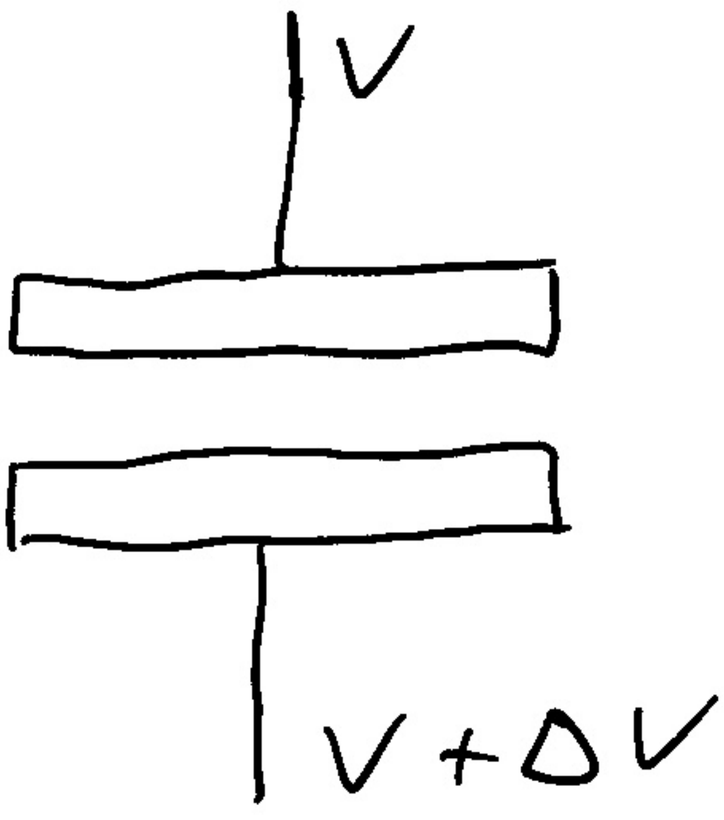
- Different way to look at this

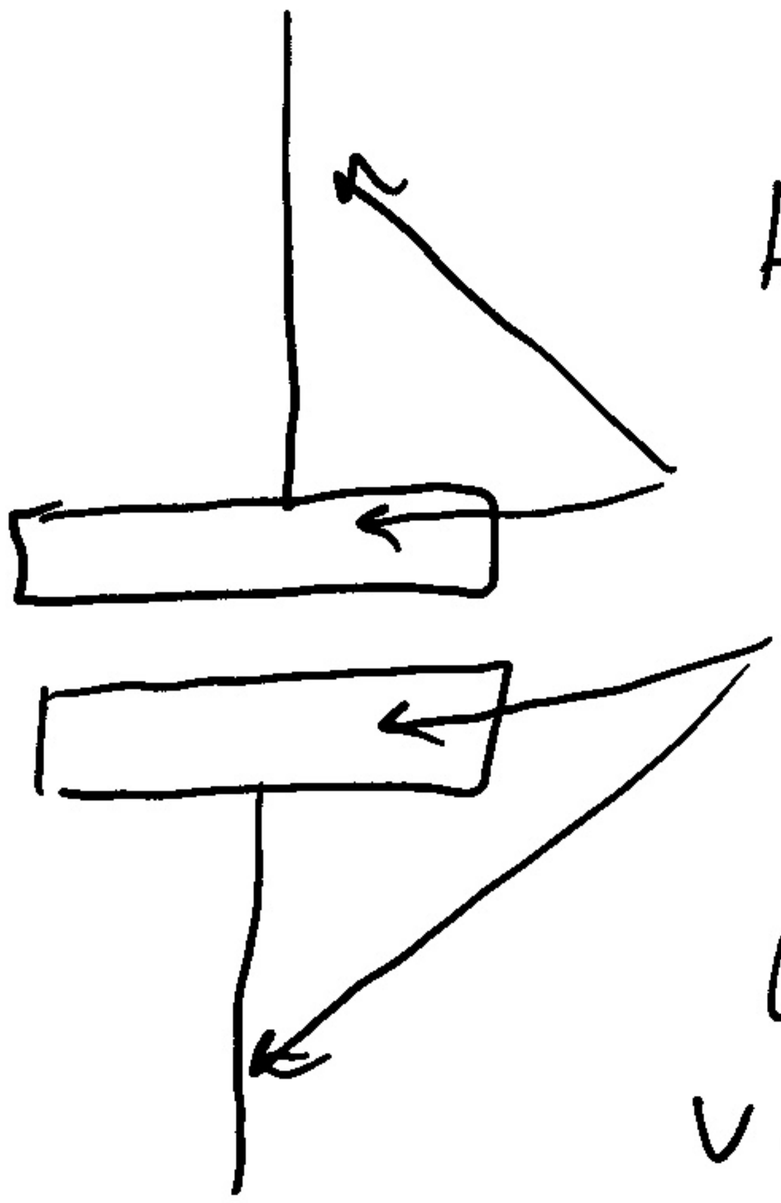



① Specify V

② Look ③ where charge flows

- ΔV across conductors forces charge to flow to cancel E in conductors

- End up w/ +σ, -σ so we cancel out $\vec{E}$ and make conductors equipotential



Have to make

$E = 0$

all these

places,

but still maintain

voltage specified

- Only way to do this is put charge on inner surface of plates so all $\Delta V$ across air gap

- Where does charge come from?

  - Along wires from whatever is producing $\Delta V$