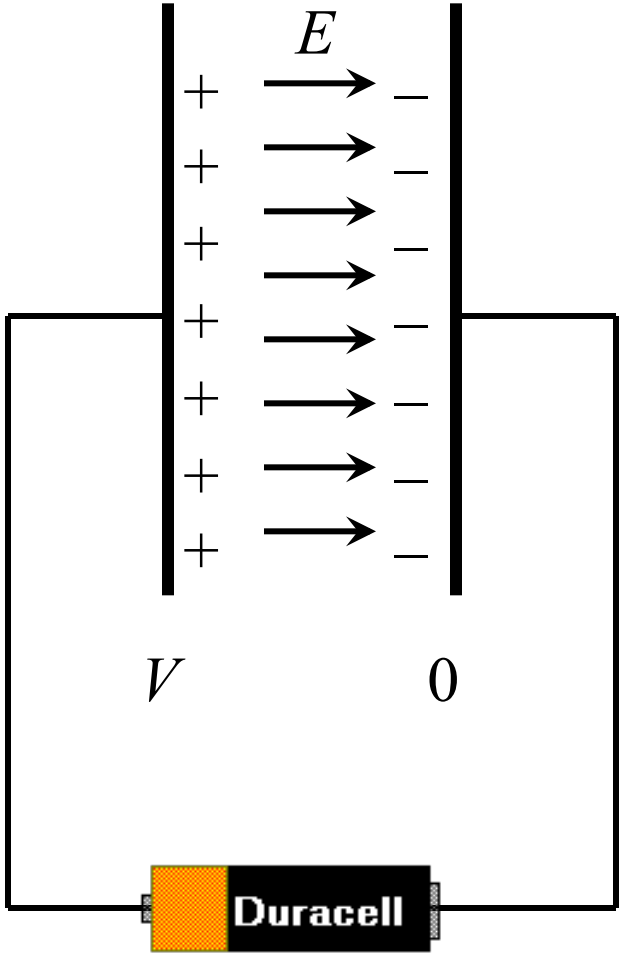
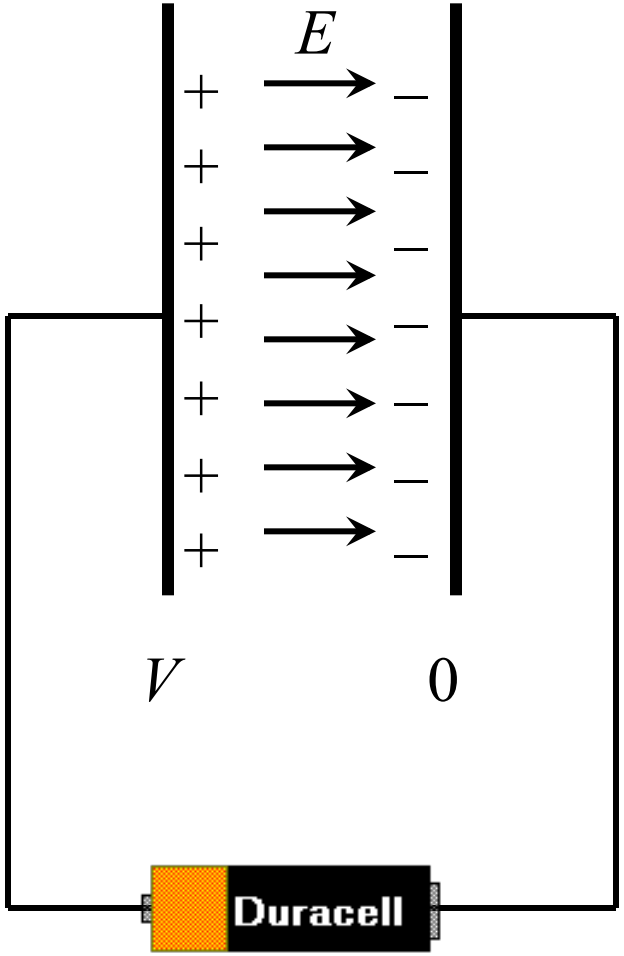
What would happen to the voltage if you first disconnected the battery and then pulled the plates further apart?

1. The potential difference would increase.
2. The potential difference would decrease.
3. The potential difference would stay the same.



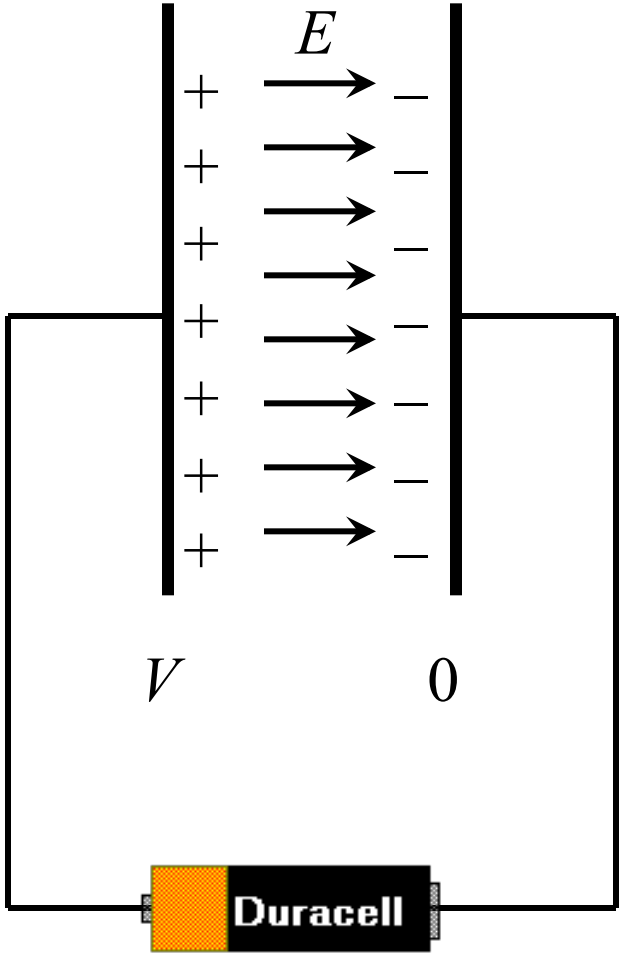
What would happen to the voltage if you stayed connected to the battery and then pulled the plates further apart?

1. The potential difference would increase.
2. The potential difference would decrease.
3. The potential difference would stay the same.



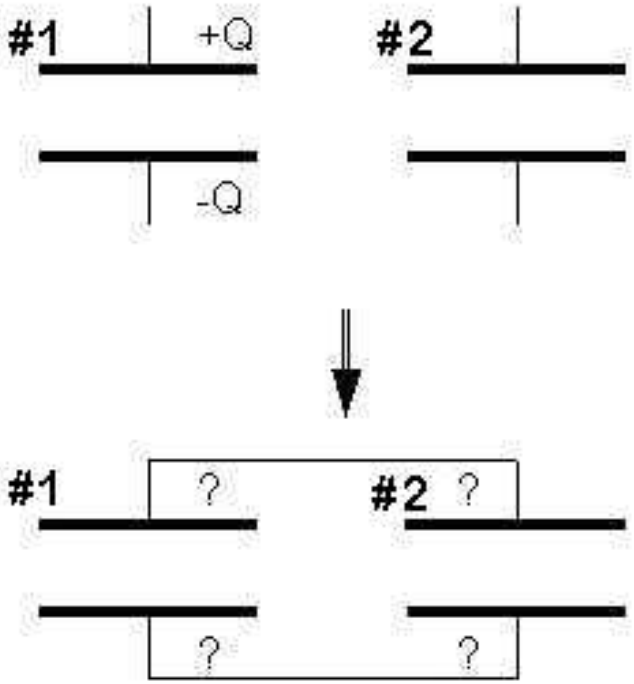
What would happen to the voltage if you stayed connected to the battery and then pulled the plates further apart?

1. The charge on each plate would increase.
2. The charge on each plate would decrease.
3. The charge on each plate would stay the same.



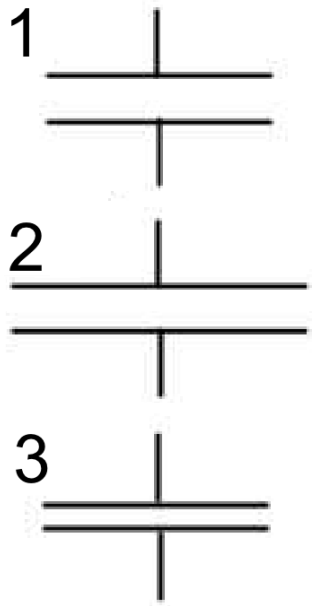
Cap #1 is charged by connecting it to a battery.
#2 is not charged.
C#1 is disconnected from the battery
and connected to C#2.
How does the magnitude of the E field
in C#1 change?

1. Same
2. Bigger by ~X2
3. Bigger but not by ~X2
4. Smaller by ~X2
5. Smaller but not by ~X2
6. Can't tell



Three capacitors 1, 2, 3 are connected to identical batteries so they each have the same ΔV.
Their plate areas and separations are as follows:
$A_2 = 2\,A_1 = 2\,A_3$; $d_1 = d_2 = 2d_3$.

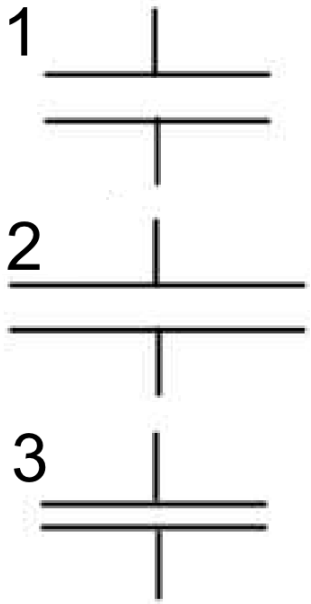
How do the E fields inside them rank?



1. $E_2 = E_3 > E_1$
2. $E_3 > E_1 = E_2$
3. $E_2 > E_1 > E_3$
4. $E_2 > E_1 = E_3$
5. $E_1 = E_2 > E_3$
6. $E_1 = E_2 = E_3$
7. Other

Three capacitors 1, 2, 3 are connected to identical batteries so they each have the same ΔV.
Their plate areas and separations are as follows:
$A_2 = 2\,A_1 = 2\,A_3$; $d_1 = d_2 = 2d_3$.

How do the net charges on them rank?

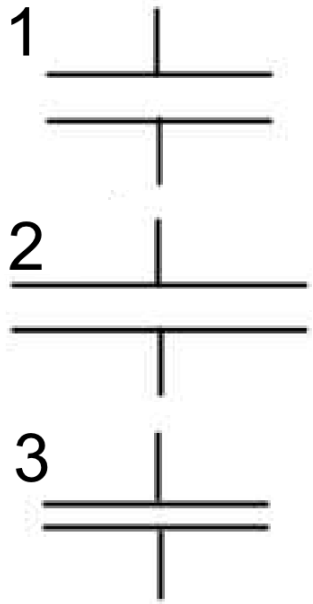


1. $Q_2 = Q_3 > Q_1$
2. $Q_3 > Q_1 = Q_2$
3. $Q_2 > Q_1 > Q_3$
4. $Q_2 > Q_1 = Q_3$
5. $Q_1 = Q_2 > Q_3$
6. $Q_1 = Q_2 = Q_3$
7. Other

Three capacitors 1, 2, 3 are connected to identical batteries so they each have the same ΔV.
Their plate areas and separations are as follows:
$A_2 = 2\,A_1 = 2\,A_3$; $d_1 = d_2 = 2d_3$.

How do the positive charges on their top plate rank?

1. $Q_2 = Q_3 > Q_1$
2. $Q_3 > Q_1 = Q_2$
3. $Q_2 > Q_1 > Q_3$
4. $Q_2 > Q_1 = Q_3$
5. $Q_1 = Q_2 > Q_3$
6. $Q_1 = Q_2 = Q_3$
7. Other



Three capacitors 1, 2, 3 are connected to identical batteries so they each have the same ΔV.
Their plate areas and separations are as follows:
$A_2 = 2\,A_1 = 2\,A_3$; $d_1 = d_2 = 2d_3$.

How do the voltage drops across their plates rank?

1. $\Delta V_2 = \Delta V_3 > \Delta V_1$
2. $\Delta V_3 > \Delta V_1 = \Delta V_2$
3. $\Delta V_2 > \Delta V_1 > \Delta V_3$
4. $\Delta V_2 > \Delta V_1 = \Delta V_3$
5. $\Delta V_1 = \Delta V_2 > \Delta V_3$
6. $\Delta V_1 = \Delta V_2 = \Delta V_3$
7. Other