

Solutions

Each answer shows the steps, then the **result**.

2.1

- it becomes polarized (its charges shift to partly oppose the field)

2.2

- $C = \kappa C_0 = 3.0 \times 2.0 = 6.0 \mu\text{F}$

2.3

- it reduces the field

3.1 B

3.2 B

3.3

(a)

- $C = \kappa C_0 = 2.0 \times 4.0 = 8.0 \mu\text{F}$

(b)

- the voltage halves to 25 V — the charge is fixed and $V = Q/C$, so doubling C halves V