Series Practice

A 4 μF capacitor and 6 μF capacitor are connected in series and charged to 5 volts. Calculate C_{eq}, and the charge on the 4 μF capacitor.

$$C_{eq} = \left(\frac{1}{C_4} + \frac{1}{C_6} \right)^{-1} = \left(\frac{1}{4\mu F} + \frac{1}{6\mu F} \right)^{-1} = 2.4\mu F$$

$$Q = CV$$

$$Q_4 = Q_6 = Q_{eq} = C_{eq}V = (2.4\mu F)(5V) = 12\mu C$$