

P #I

Ch 16 - Worksheet

$$A = 2.0 \text{ cm}^2 \cdot \left(\frac{1 \text{ m}}{100 \text{ cm}}\right)^2 = 2 \times 10^{-4} \text{ m}^2$$

$$d = 2.0 \text{ mm} = .002 \text{ m}$$

$$V = 6.0 \text{ V}$$

Find C:

$$C = \frac{\epsilon_0 \cdot A}{d}$$

$$= \frac{(8.85 \times 10^{-12} \text{ C}^2/\text{V}\cdot\text{m}^2)(2 \times 10^{-4} \text{ m}^2)}{.002 \text{ m}}$$

$$C = 8.85 \times 10^{-13} \text{ F}$$

Find Q:

$$C = \frac{Q}{V}$$

$$(8.85 \times 10^{-13} \text{ F}) = \frac{Q}{6 \text{ V}}$$

$$Q = 5.31 \times 10^{-12} \text{ V}$$