

48. The potential difference across the capacitor varies as a function of time  $t$  as  $V(t) = V_0 e^{-t/RC}$ . Using  $V = V_0/4$  at  $t = 2.0\text{ s}$ , we find

$$R = \frac{t}{C \ln(V_0/V)} = \frac{2.0\text{ s}}{(2.0 \times 10^{-6}\text{ F}) \ln 4} = 7.2 \times 10^5 \Omega .$$