62. (a) The potential difference $V$ across the plates of a capacitor is related to the charge $q$ on the positive plate by $V = q/C$, where $C$ is capacitance. Since the charge on a discharging capacitor is given by $q = q_0 e^{-t/\tau}$, this means $V = V_0 e^{-t/\tau}$ where $V_0$ is the initial potential difference. We solve for the time constant $\tau$ by dividing by $V_0$ and taking the natural logarithm:

$$\tau = -\frac{t}{\ln(V/V_0)} = -\frac{10.0\,\text{s}}{\ln\left[(1.00\,\text{V})/(100\,\text{V})\right]} = 2.17\,\text{s}.$$

(b) At $t = 17.0$ s, $t/\tau = (17.0\text{ s})/(2.17\text{ s}) = 7.83$, so

$$V = V_0 e^{-t/\tau} = (100\,\text{V})e^{-7.83} = 3.96\times10^{-2}\ \text{V}\ .$$