31.38. **Model:** Assume ideal wires as the capacitors discharge through the two 1 kΩ resistors.

**Visualize:** The circuit in Figure Ex37.38 has an equivalent circuit with resistance $R_{eq}$ and capacitance $C_{eq}$.

**Solve:** The equivalent capacitance is $C_{eq} = 2 \mu F + 2 \mu F = 4 \mu F$, and the equivalent resistance is

$$\frac{1}{\frac{1}{R_{eq}}} = \frac{1}{1 \text{ k} \Omega} + \frac{1}{1 \text{ k} \Omega} \implies R_{eq} = 500 \text{ } \Omega$$

Thus, the time constant for the discharge of the capacitors is

$$\tau = R_{eq}C_{eq} = (500 \text{ } \Omega)(4 \mu F) = 2 \times 10^{-3} \text{ s} = 2 \text{ ms}$$