

Ch 10. Prob 49

$$C = 0.500 \mu\text{F}$$

$$\tau_1 = 2.00 \text{ s}$$

$$\tau_2 = 15.0 \text{ s}$$

Find the range of the variable resistor.

Since  $\tau = R \cdot C$ , then  $R = \frac{\tau}{C}$

$$R_1 = \frac{2.00 \text{ s}}{0.500 \times 10^{-6} \text{ F}} = 4.00 \times 10^6 \Omega$$

4 M $\Omega$

$$R_2 = \frac{15.0 \text{ s}}{0.500 \times 10^{-6} \text{ F}} = 3.00 \times 10^7 \Omega$$

30 M $\Omega$