

1. Draw a schematic diagram of a series RC circuit with a resistance of $3000\ \Omega$, a capacitance of $0.01\ \mu\text{F}$, and AC source of 250V at 200Hz .
2. Find the following unknowns for question 1:
 - a. z
 - b. \mathbf{I}_T
 - c. V_R
 - d. V_C
 - e. P_{TRUE}

3. If a capacitor of $3.3\ \mu\text{F}$ and a resistor of $4700\ \Omega$ are connected in series, what is the time constant?
4. Draw a parallel RC circuit using a 14V source operation at $400\ \text{Hz}$, $25\ \Omega$ resistance with a $4,7\ \mu\text{F}$ capacitor.
5. Find the following unknowns for question 4:
 - a. z
 - b. \mathbf{I}_T
 - c. \mathbf{I}_R
 - d. \mathbf{I}_C
 - e. o
 - f. P_{TRUE}