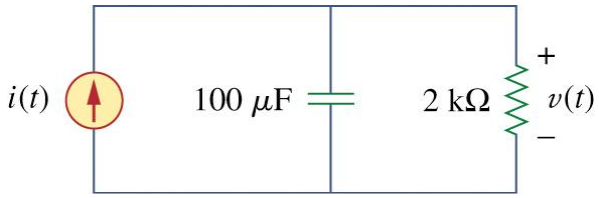
In the circuit below, $i(t) = 20 + 16\cos(10t + 45°) + 12\cos(20t - 60°)$ mA



P1 **Concept:** Frequency response
Find: $v(t)$
Hint: One part of the answer is $14.3\cos(10t - 18.4°)$

P2 **Concept:** Average power given sum of sinusoids
Find: The average power dissipated by the resistor
Hint: Answer is between 800mW and 900mW

P3 **Concept:** RMS values of a sum of sinusoids
Find: I_{RMS} (not V_{RMS})
Hint: Answer is between $10mA_{RMS}$ and $30mA_{RMS}$

P4 **Concept:** Power delivered to a normalized load at a specific frequency
Find: Power delivered by the $5/\pi$ Hz component of the source if attached to a 1Ω load.
Hints: You can find it directly from one of the $A\angle\theta$ components of the source.
The answer is between 100 and 200μW.