

King Fahd University of Petroleum and Minerals

Electrical Engineering Department

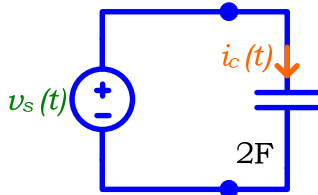
EE 208: Electrical Systems

Instructor: Umar M. Johar

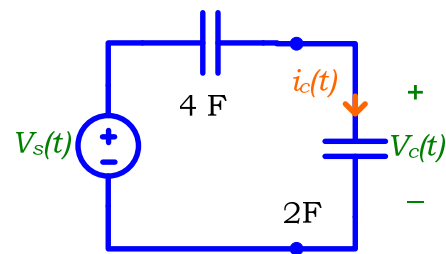
Home Work # 6

1. Knowing the current across a $3H$ inductor is given by $10 \sin(2t + \frac{\pi}{2})$, find $V_L(t)$, $p_L(t)$, and $w_L(t)$.

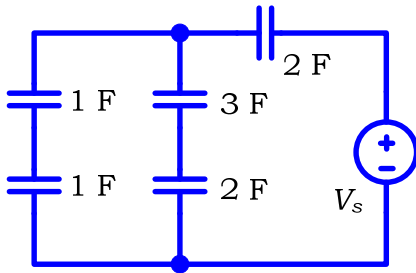
2. For the circuit shown, if the voltage $v_s(t) = 10 \cos(2t + \frac{\pi}{2}) [V]$, find $i_c(t)$ and the energy stored in the capacitor.



3. Find $i_c(t)$ and $v_s(t)$ knowing that the voltage across the capacitor in the circuit is $v_c(t) = 24 \sin(2t + \frac{\pi}{4}) [V]$.



4. Find the energy stored in the $3F$ capacitor knowing that the voltage source in the circuit below is given by $V_s(t) = 30 \sin(3t) [V]$.



5. Find the energy stored in the $36H$ inductor knowing that the voltage source in the circuit below is given by $V_s(t) = 30 \sin(5t) [V]$.

