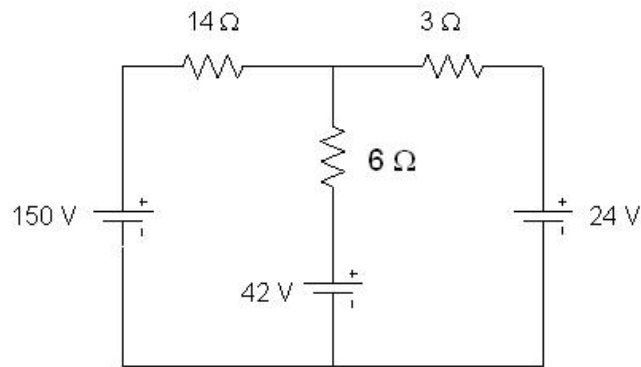


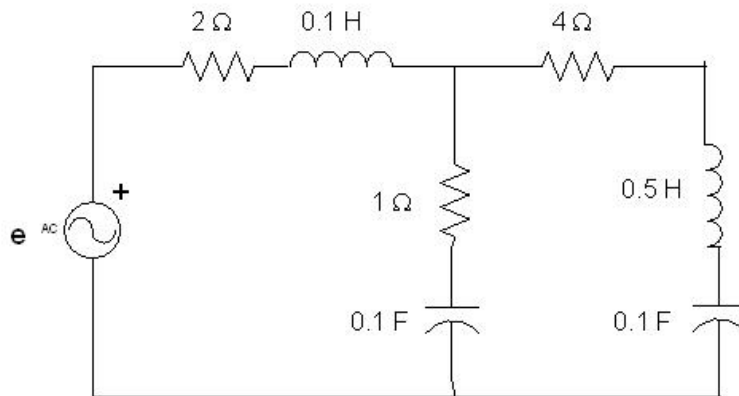
Q (1) Determine the power absorbed in the element (R, L, or C) associated with the voltage and current waveforms:

- (a) $v(t) = 100 \cos(250t) \text{ V}$
 $i(t) = 2 \sin(250t) \text{ A}$
- (b) $v(t) = 141.4 \sin(1000t + 30) \text{ V}$
 $i(t) = 0.707 \cos(1000t - 60) \text{ A}$
- (c) $v(t) = 150 \sin(4000t - 45) \text{ V}$
 $i(t) = 0.3 \sin(4000t + 45) \text{ A}$
- (c) $v(t) = 28.28 \cos(500t - 60) \text{ V}$
- (d) $i(t) = 3.535 \sin(500t - 60) \text{ A}$

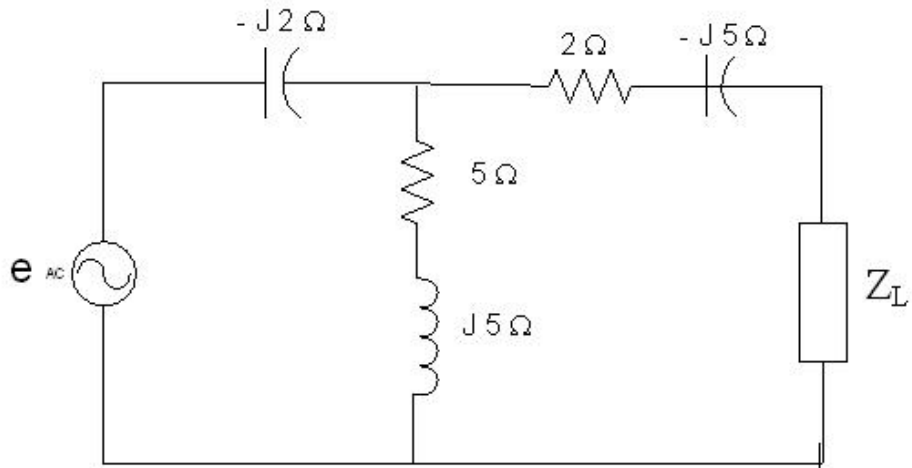
Q (2) Using Mesh analysis, find the current passing through the 6Ω resistor



Q (3) In the circuit shown, $e = 14.14 \sin 10t$ volts. Find out the total current in the time domain. Also, calculate the total power absorbed in the circuit.



Q (4) In the circuit shown, find the value of Z_L to receive maximum power from the source $e = 20 \sin \omega t$



- Q (5) A load whose impedance is $Z = 8 + j6 \Omega$ is supplied by a source whose voltage is $V = 30 + j0$ V. it is required to find out:
- the power triangle for S , P , Q .
 - the power factor of the load.
 - the current passing through the load.