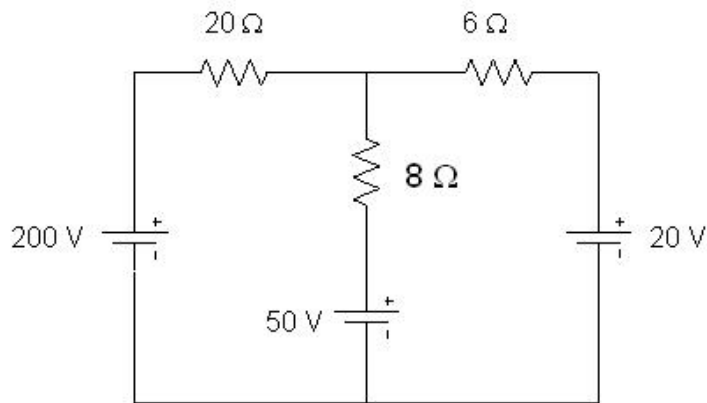


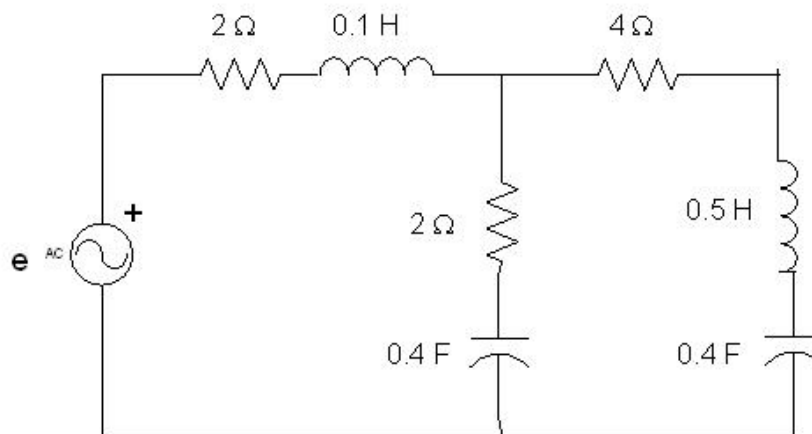
Q (1) Determine the power absorbed in the element (R, L, or C) associated with the voltage and current waveforms:

- (a) $v(t) = 20 \cos(250t)$ V
 $i(t) = 5 \sin(250t)$ A
- (b) $v(t) = 40 \sin(200t + 30)$ V
 $i(t) = 0.707 \cos(200t - 60)$ A
- (c) $v(t) = 100 \sin(400t - 45)$ V
 $i(t) = 0.8 \sin(400t + 45)$ A
- (c) $v(t) = 30.80 \cos(1000t - 60)$ V
- (d) $i(t) = 4.5 \sin(1000t - 60)$ A

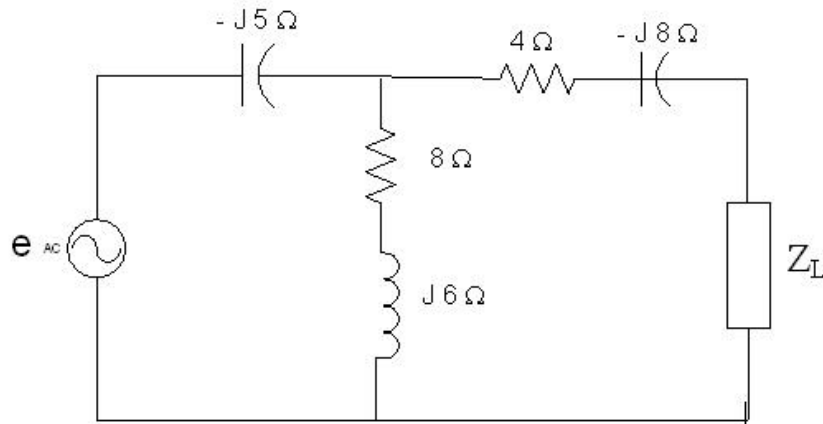
Q (2) Using Mesh analysis, find the current passing through the 6Ω resistor



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.



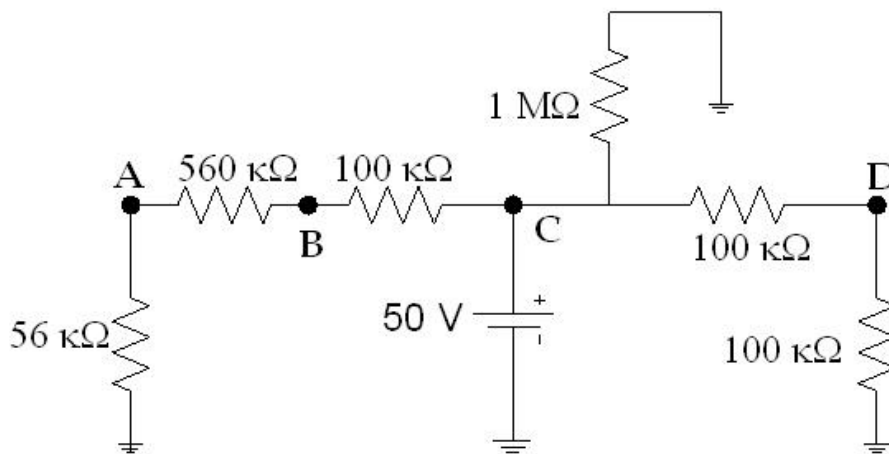
- Q (4) In the circuit shown, find the value of Z_L to receive maximum power from the source
 $e = 20 \sin \omega t$



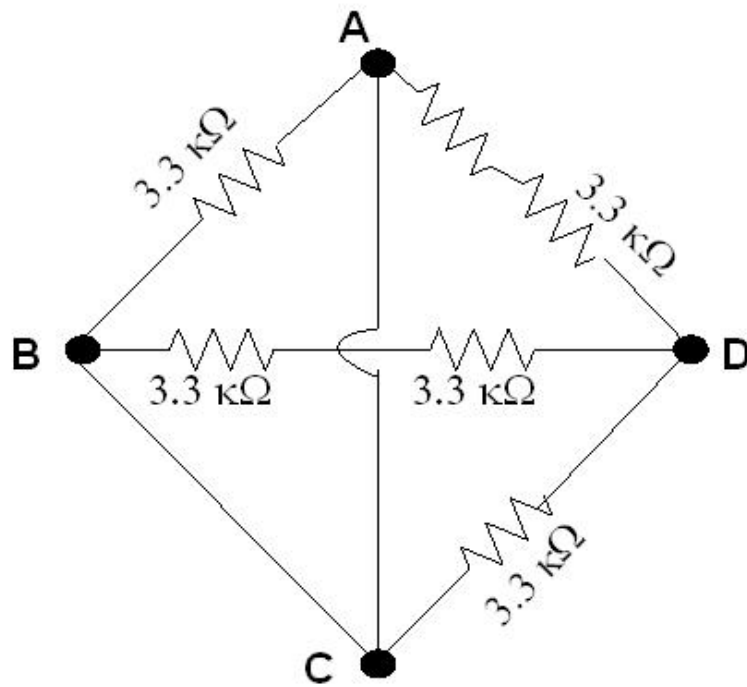
- Q (5) A load whose impedance is $Z = 4 + j3 \Omega$ is supplied by a source whose voltage is $V = 20 + j10$ V. it is required to find out:
 (a) the power triangle for S, P, Q.
 (b) the power factor of the load.
 (c) the current passing through the load.

Q (5)

- a) In the shown circuit, determine the voltage at each point indicated in the circuit with respect to the ground.



- a) Find the resistance between each set of points (AB, BC and CD)



Q (6)
 Find the load impedance Z_L for maximum power transfer, also find that maximum power (P_{Lmax})

