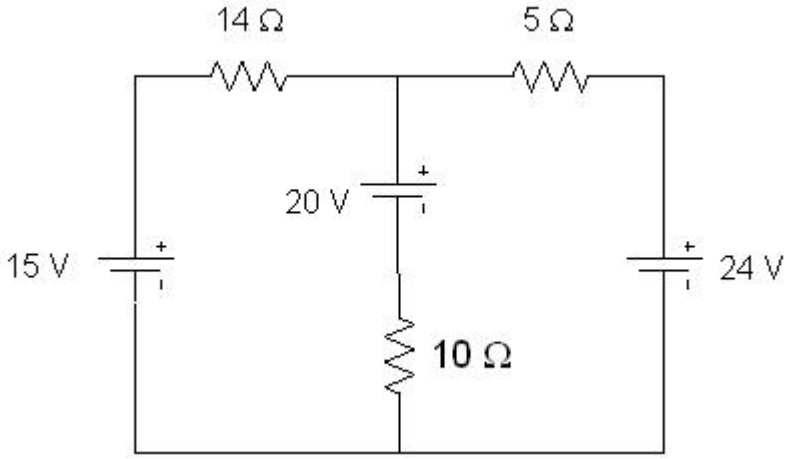
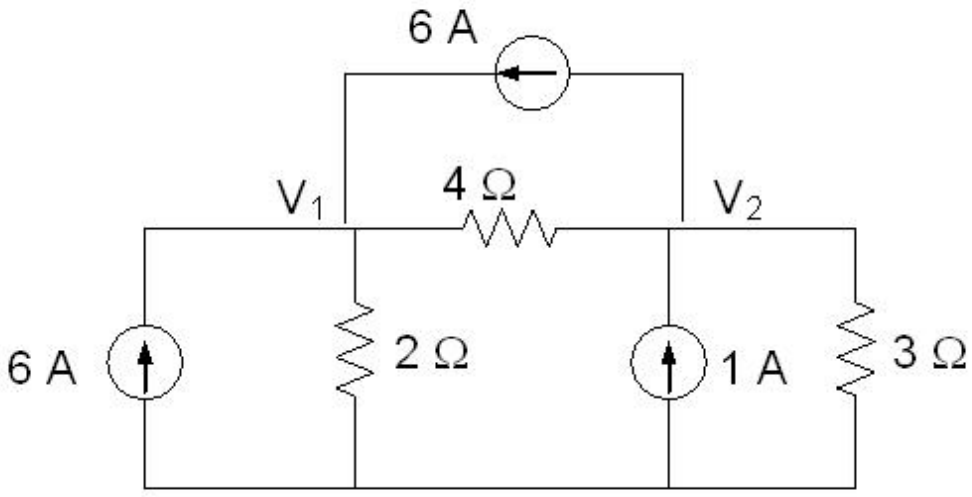
Q (1) Using Mesh analysis, find the current passing through the 10 Ω resistor



Q (2) Using Nodal analysis, find **V1** and **V2**.



Q (3) A load whose impedance is Z = 8 + j 6 Ω is supplied by a source whose

voltage is V = $\sqrt{2}$ 30 cos (ωt - 30°) V. it is required to find out:

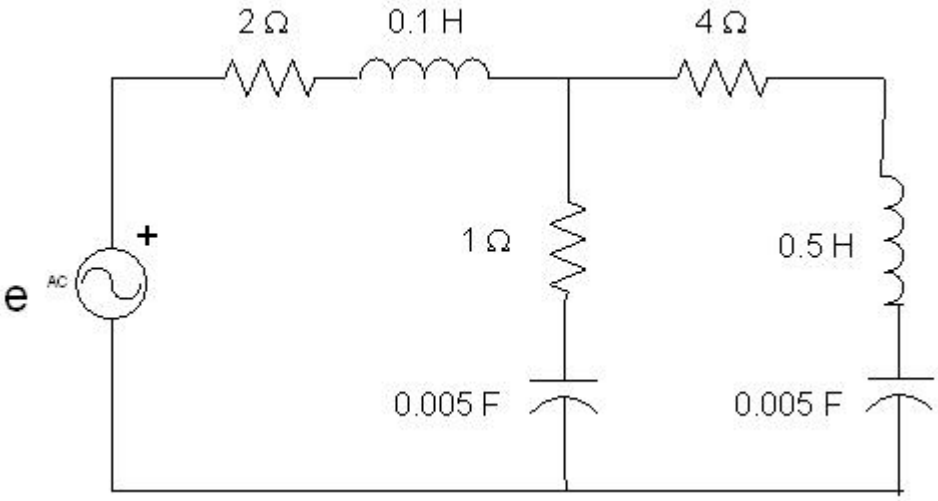
(a) the apparent power (S).

(b) the effective power (P).

(c) the reactive power (Q).

Also, draw the power triangle.

Q (4) In the circuit shown, $e = \sqrt{2}$ ***100 sin 20t*** volts. Find out the total current in the time domain. Also, calculate the total power absorbed in the circuit. [[Hint: use series/parallel method].



Q (5) In the circuit shown, find out:

(a) the value of **ZL** to receive maximum power (**PLmax**) from the source

$e = \sqrt{2}\, 20 \sin \omega t$

(b) the value of **PLmax**