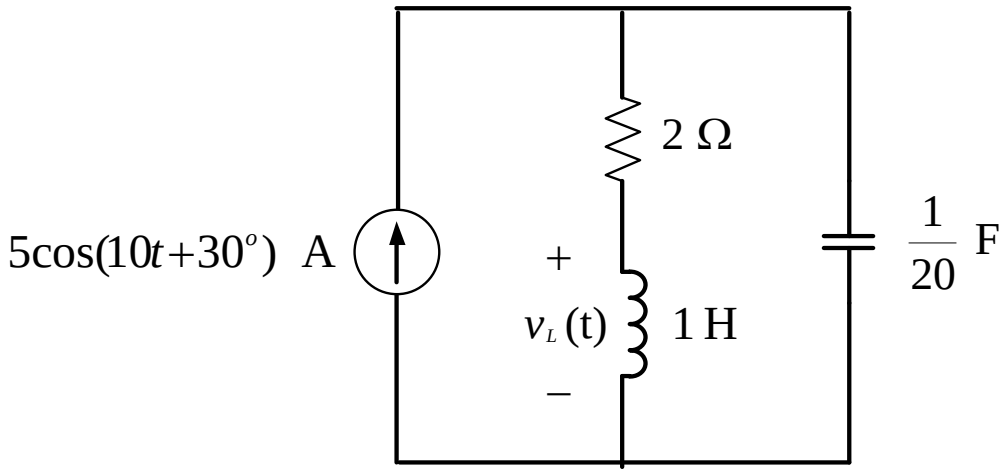
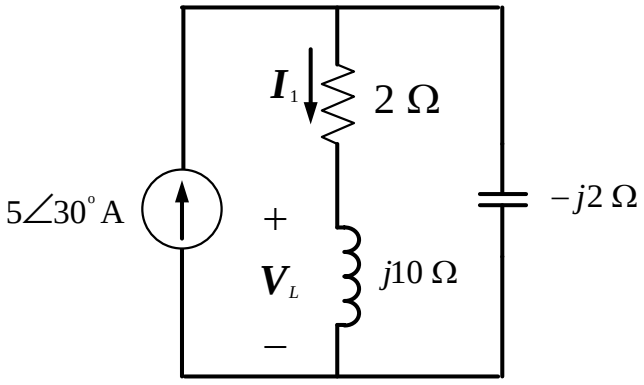
EE 202-02-Winter 2013(132)
QZ7

Sec	Ser	ID	Name **KEY**



In the circuit shown above , find the $v_L(t)$?

Solution



$$\boldsymbol{I}_1=\frac{-j2}{(2+j10)+(-j2)}\left(5\angle 30^{o}\right)=1.21\angle -135.96^{o}\ \text{A}$$

$$\boldsymbol{V}_L=(j10)\boldsymbol{I}_1=12.1\angle -45.96^{o}\ \text{A}$$

$$\Rightarrow v_L(t)=12.1\cos(10t-45.96^{o})\quad \text{V}$$