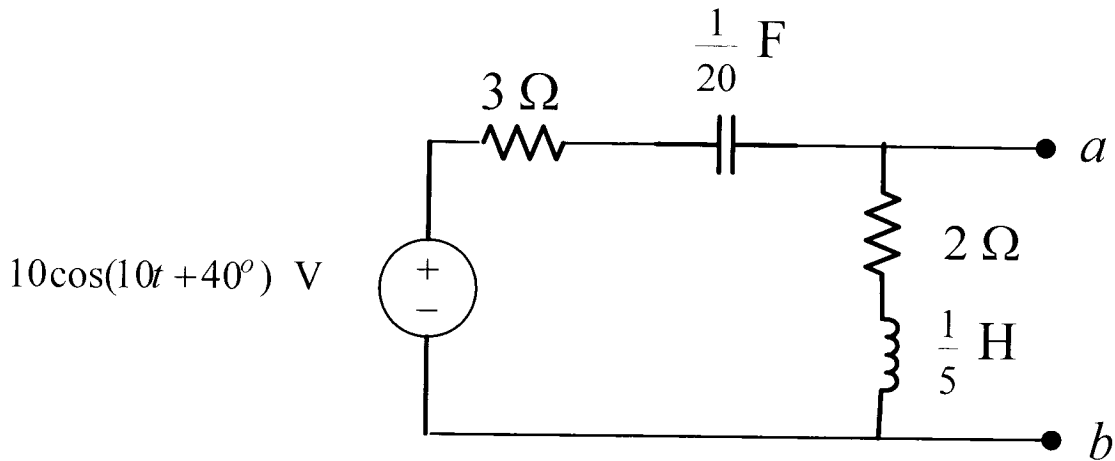
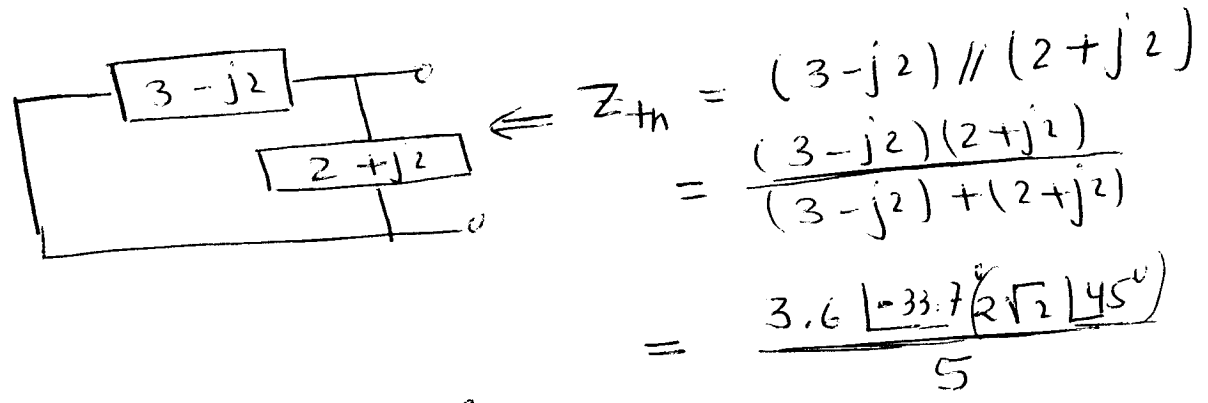
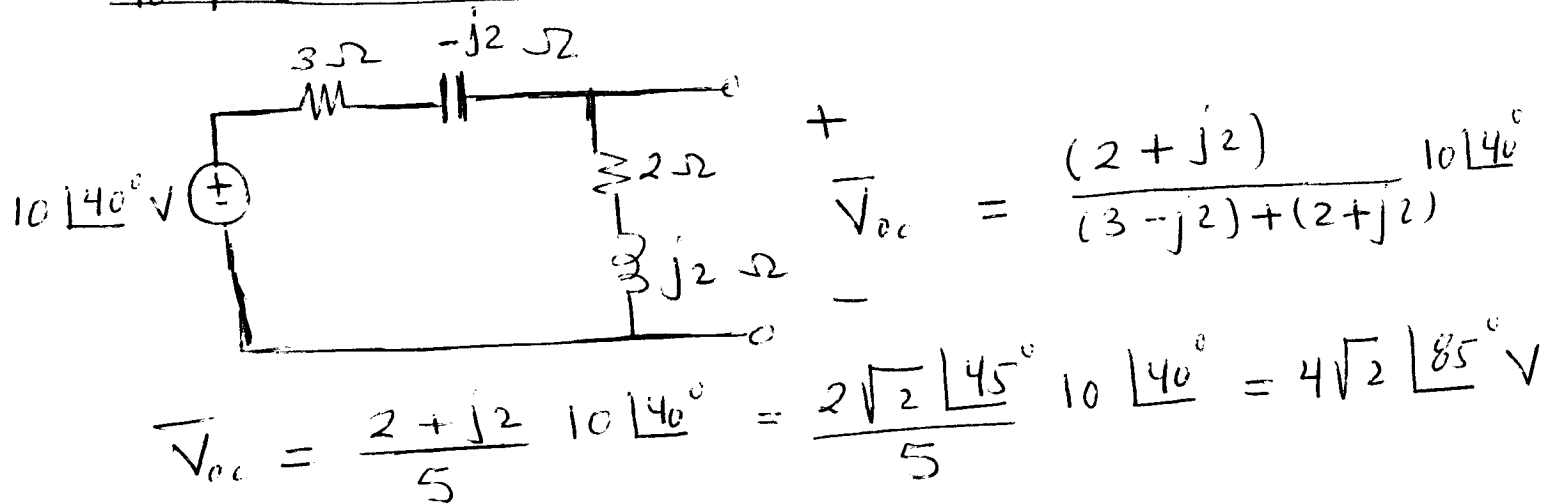


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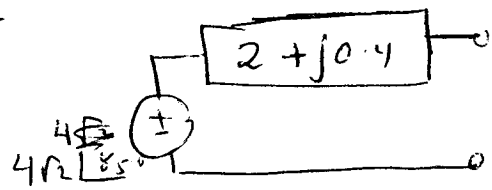
For the circuit shown above, find the Thevenin Equivalent?
Do Not Find the Norton Equivalent?

To phasor domain

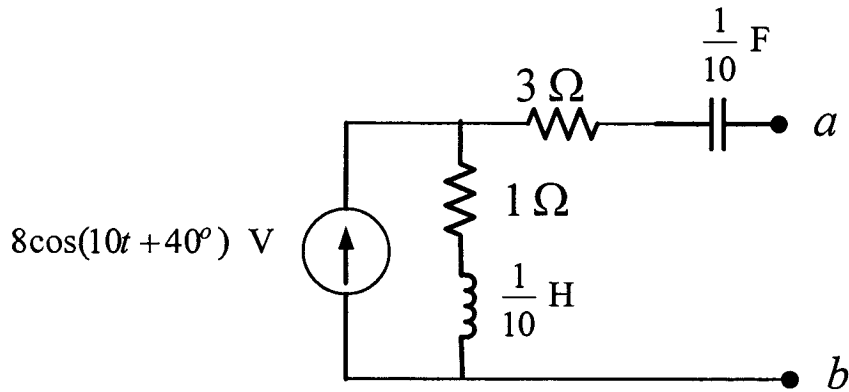


$$= 2.04 \angle 11.31^\circ \Omega$$

$$= 2 + j0.4 \Omega$$

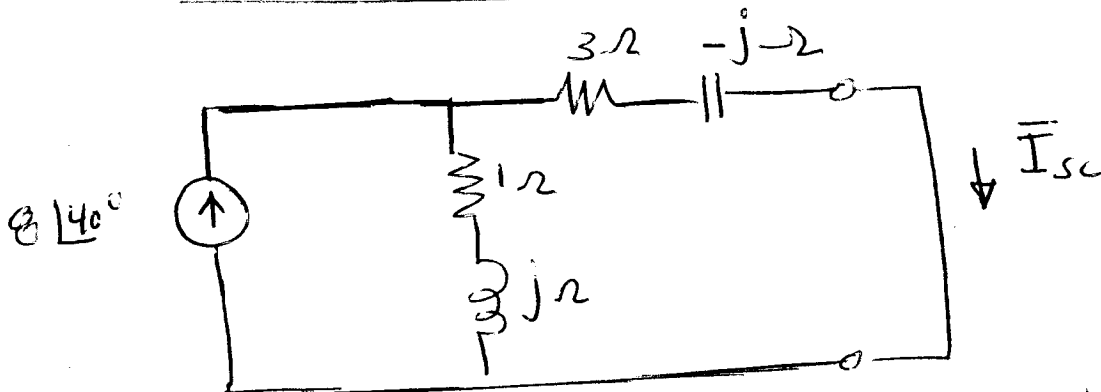


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For the circuit shown above, find the Norton Equivalent ?
Do Not Find the Thevenin Equivalent ?

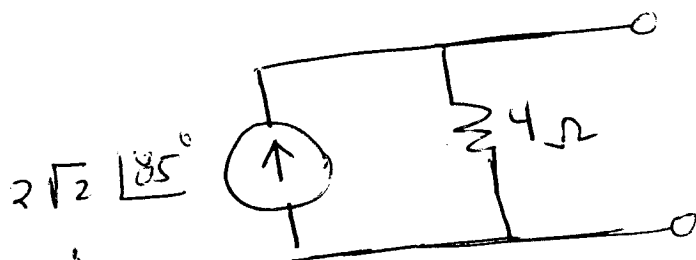
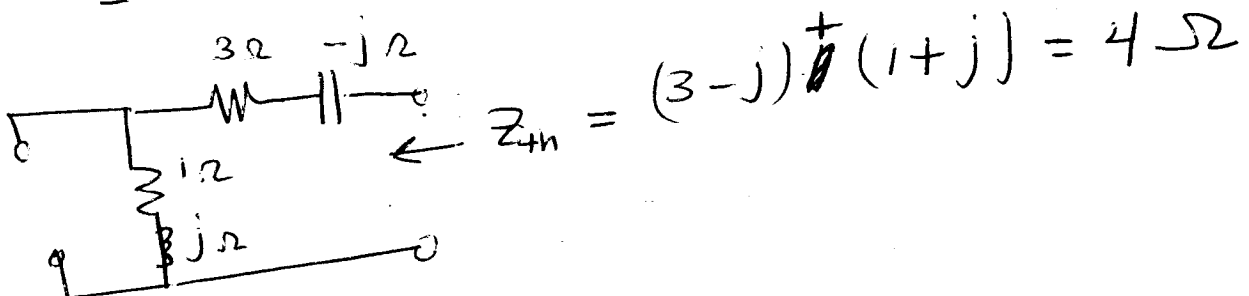
To phasor domain



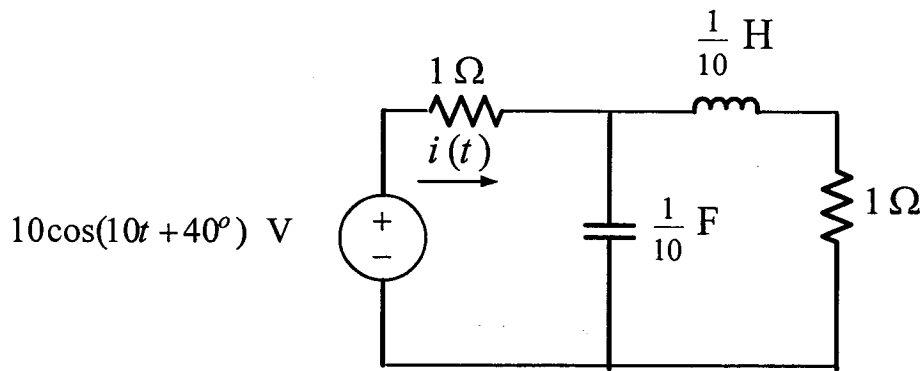
current division

$$\bar{I}_{sc} = \frac{(1+j) 8\angle 40^\circ}{(1+j) + (3-j)} = \frac{1+j}{4} 8\angle 40^\circ = \frac{(\sqrt{2} \angle 45^\circ) (8\angle 40^\circ)}{4}$$

$$= 2\sqrt{2} \angle 85^\circ \text{ A}$$

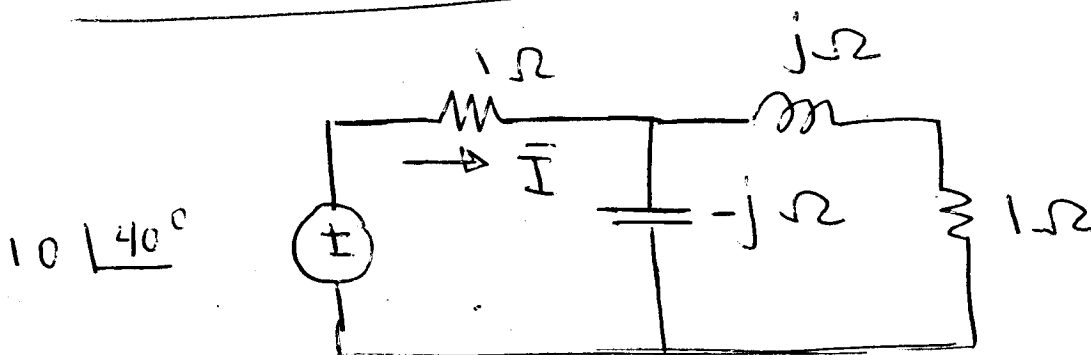


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For the circuit shown above, find $i(t)$?

To phasor domain



$$\bar{I} = \frac{10 \angle 40^\circ}{Z_{eq}}$$

$$\begin{aligned} Z_{eq} &= 1 + (-j) \parallel (1 + j) \\ &= 1 + \frac{(-j)(1 + j)}{(-j) + (1 + j)} = 1 + \frac{-j - j^2}{1} \\ &= 1 + (1 - j) = 2 - j \\ &= \cancel{2.236 \angle -22.9^\circ} \Omega \\ &= 2.236 \angle -26.56^\circ \Omega \end{aligned}$$

$$\Rightarrow \bar{I} = \frac{10 \angle 40^\circ}{2.236 \angle -26.56^\circ} = 4.47 \angle 66.56^\circ \text{ A}$$

$$\Rightarrow i(t) = 4.47 \cos(10t + 66.56^\circ) \text{ A}$$