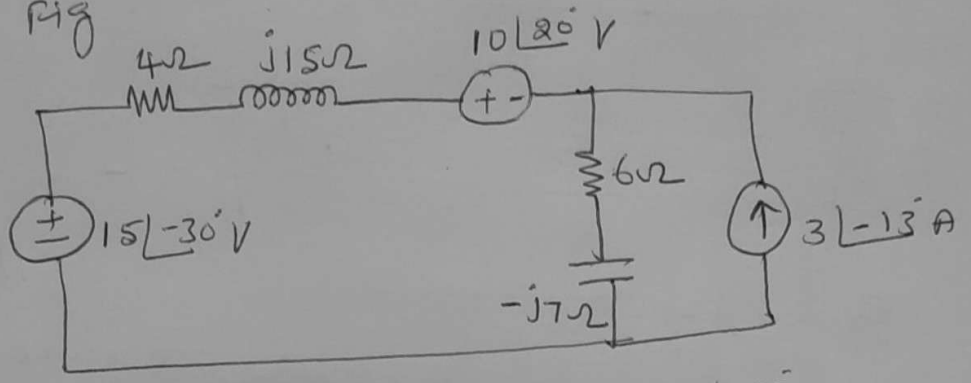
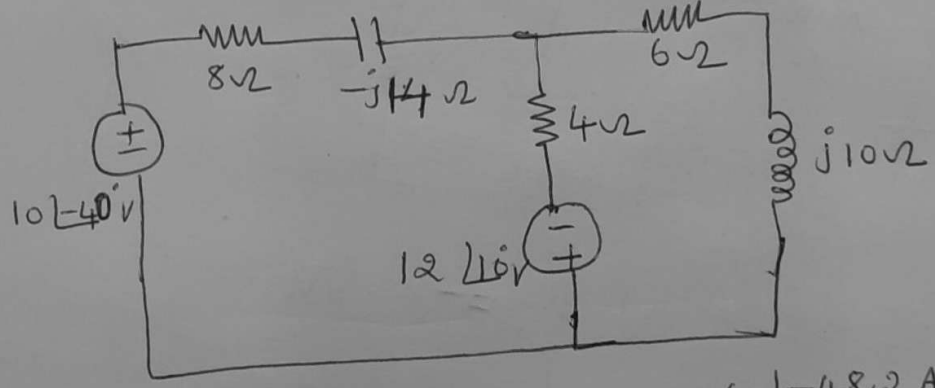
AC Source problems

Ex: Find the mesh currents for the circuit shown in Fig



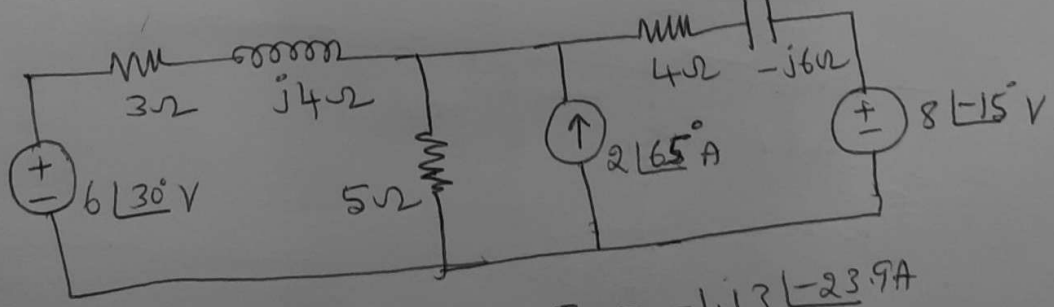
Ans: $I_1 = 1.28\angle 85.5$ A, $I_2 = -3\angle -13$

Ex: Some mesh currents for the circuit shown in Fig



Ans: $I_1 = 0.974\angle 41.5$ A, $I_2 = -0.63\angle -48.2$ A

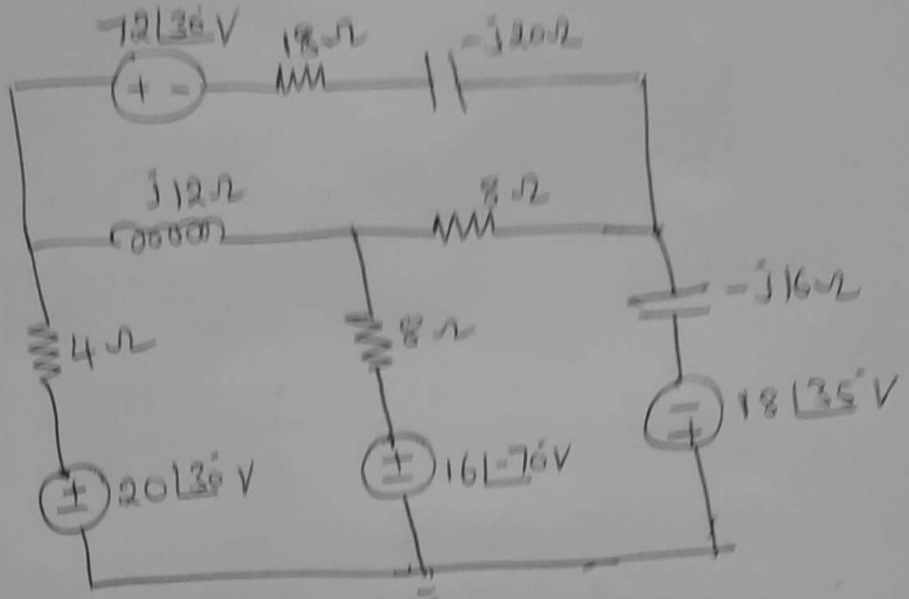
Ex: Find the mesh currents for the circuit shown in Fig



Ans: $I_1 = -0.631\angle 15.6$ A, $I_2 = -1.13\angle -23.9$ A

$I_3 = -2.31\angle 35.9$ A

Ex: Use mesh analysis to solve for the currents in the circuit shown in Fig.



Ans: $I_1 = 2.07\angle -26.6°\ A$, $I_2 = 1.38\angle 7.36°\ A$

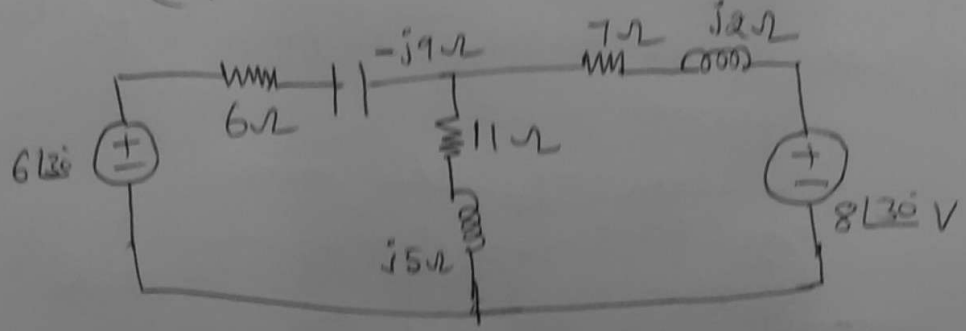
$I_3 = 1.53\angle -146°\ A$

Ex: Show a circuit that corresponds to the following mesh equations.

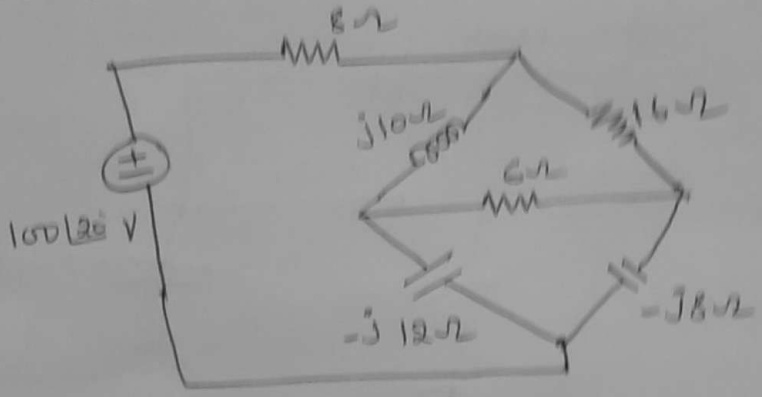
$$(17 - j4)I_1 - (11 + j5)I_2 = 6\angle 30°$$

$$-(11 + j5)I_1 + (18 + j7)I_2 = -8\angle 30°$$

Ans.

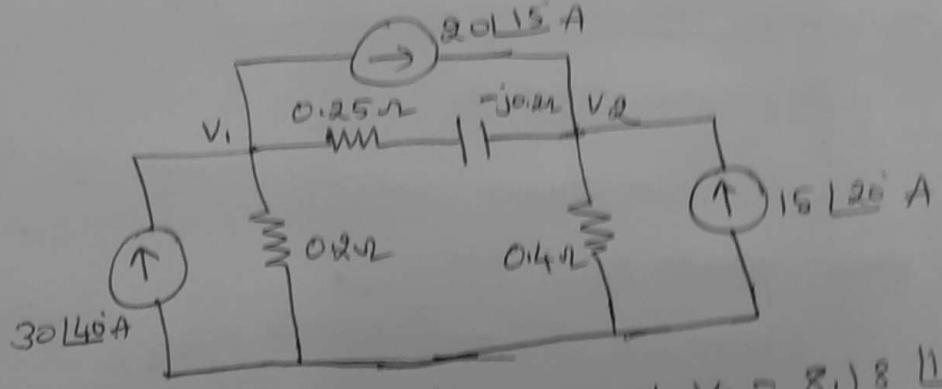


Ex: use loop analysis to solve for the current flowing thro' 6Ω resistor in the ckt



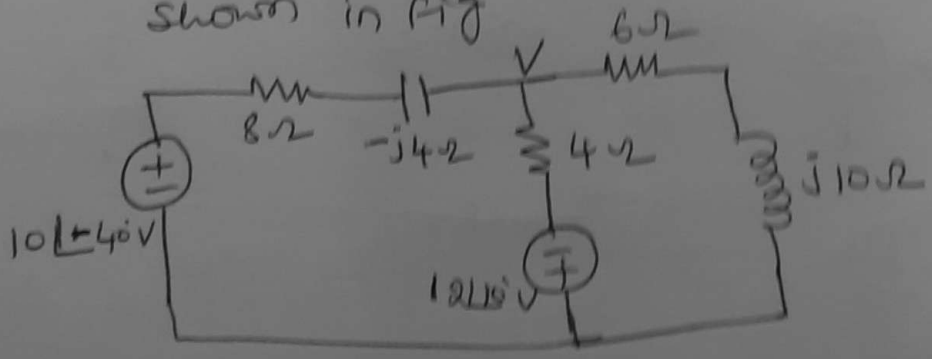
Ans: $I = 3.62\angle -45.8°$ A

Ex: Find the node voltages in the circuit shown in fig



Ans: $V_1 = 5.13\angle 47.3$ V and $V_2 = 8.18\angle 15.7$ V

Ex: use nodal analysis to find V for the circuit shown in fig



Ans: $V = -7.35\angle 10.8$ V