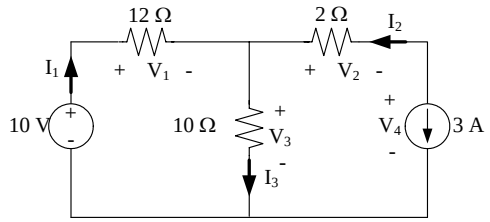
Review of DC Circuit Analysis

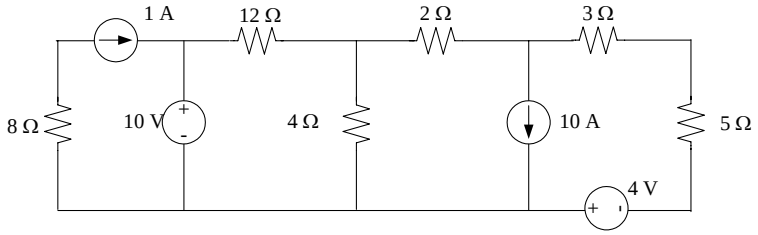
I expect that you already know how to solve this problems. If you are having trouble with these, you need to review your EE 213/EE 300 notes. I will review techniques like KCL, KVL, nodal analysis, mesh analysis, superposition, equivalent circuits and source transformation, but it should be a refresher for you.

1. Consider the following circuit, use nodal, mesh and superposition to find each labeled current and voltage, and the power delivered or absorbed by each element.



Element	I (A)	V (V)	P (W)
10V source	1.82	10	18.20 D
12 ohm	1.82	21.82	39.75 A
10 ohm	-1.18	-11.82	13.92 A
2 ohm	-3	6	18 A
3A source	3	-17.82	53.46 D

2. Solve for all the currents, voltages and power associated with each element in the circuit given below. Unless given, label the current directions and voltage polarities.



Element	V (V)	I (A)	P (W)
8 ohm	8	1	8 A
1A source	-18	1	18 D
10V source	10	-1.29	12.90 D
12 ohm	27.48	2.29	62.93 A
4 ohm	-17.48	-4.37	76.39 A
2 ohm	13.30	6.65	88.45 A
10A source	-30.77	10	307.70 D
3 ohm	-10.05	-3.35	33.67 A
5 ohm	-16.75	-3.35	56.11 A
4V source	4	-3.35	13.40 A

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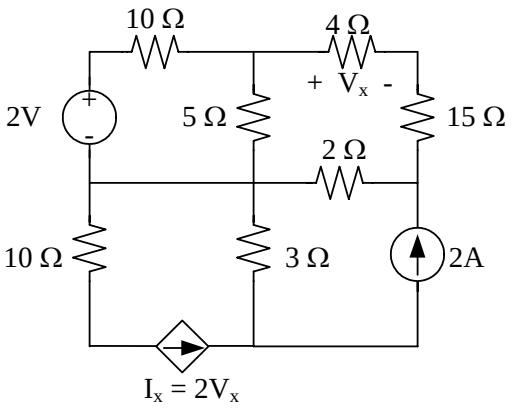

Element	V (V)	I (A)	P (W)
10 ohm top	0.88	0.09	0.08 A
2A source	13.01	2	26.03 D
2V source	2	0.09	0.18 D
15 ohm	-2.06	-0.14	0.28 A
4 ohm	-0.55	-0.14	0.08 A
2 ohm	3.73	1.86	6.94 A
Dep source	-20.25	-1.10	22.19 D
3 ohm	-9.29	3.10	28.75 A
5 ohm	1.12	0.22	0.25 A
10 ohm left	-10.96	-1.10	12.01 A