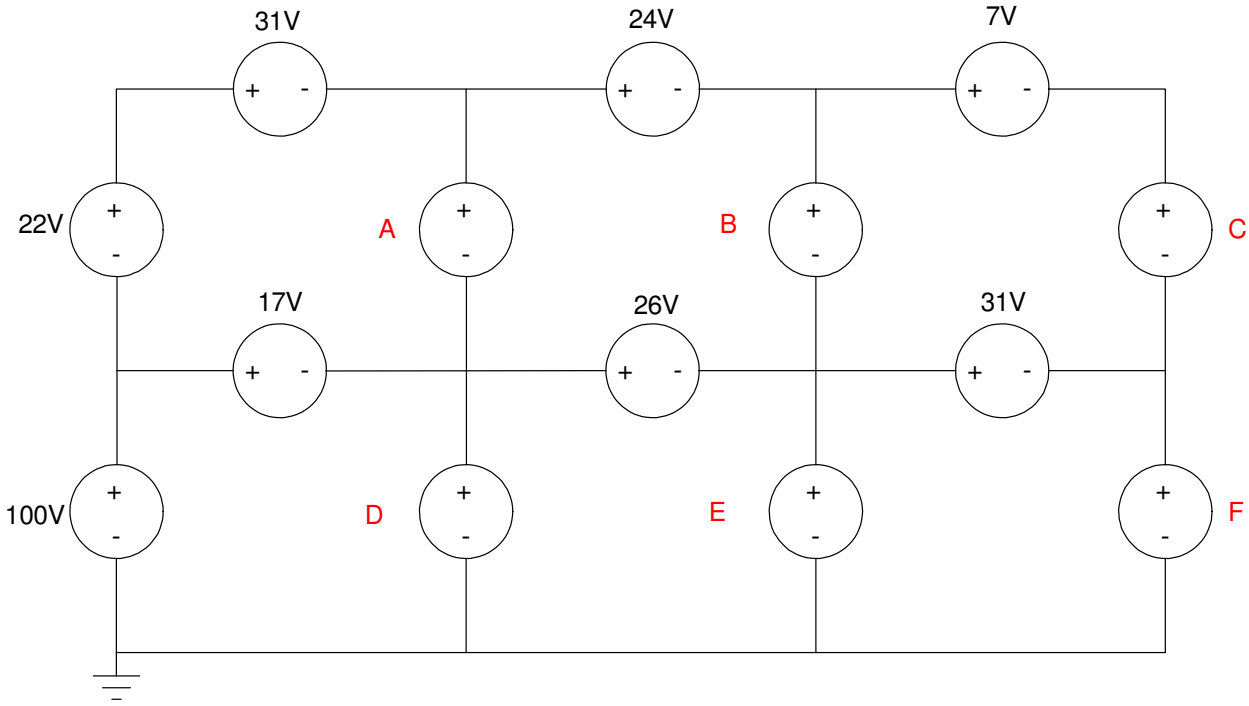
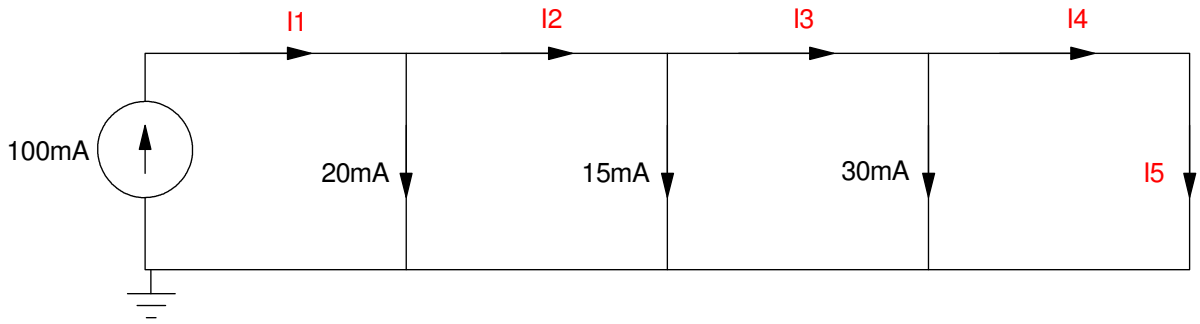
ECE 111: Handout #8

Week #8: EE 206 Circuits I

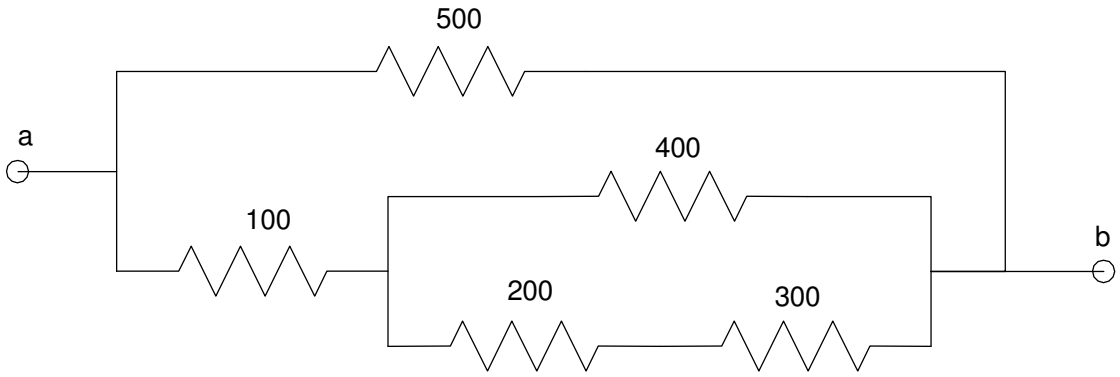
1) Find the unknown votlages using conservation of voltage



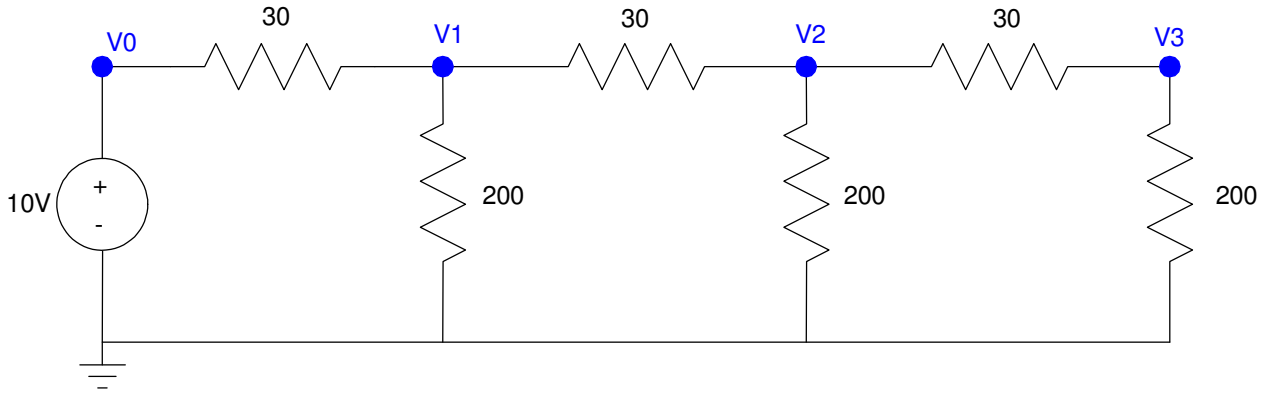
2) Find I1..I6 using conservation of current



3) Determine the resistance Rab



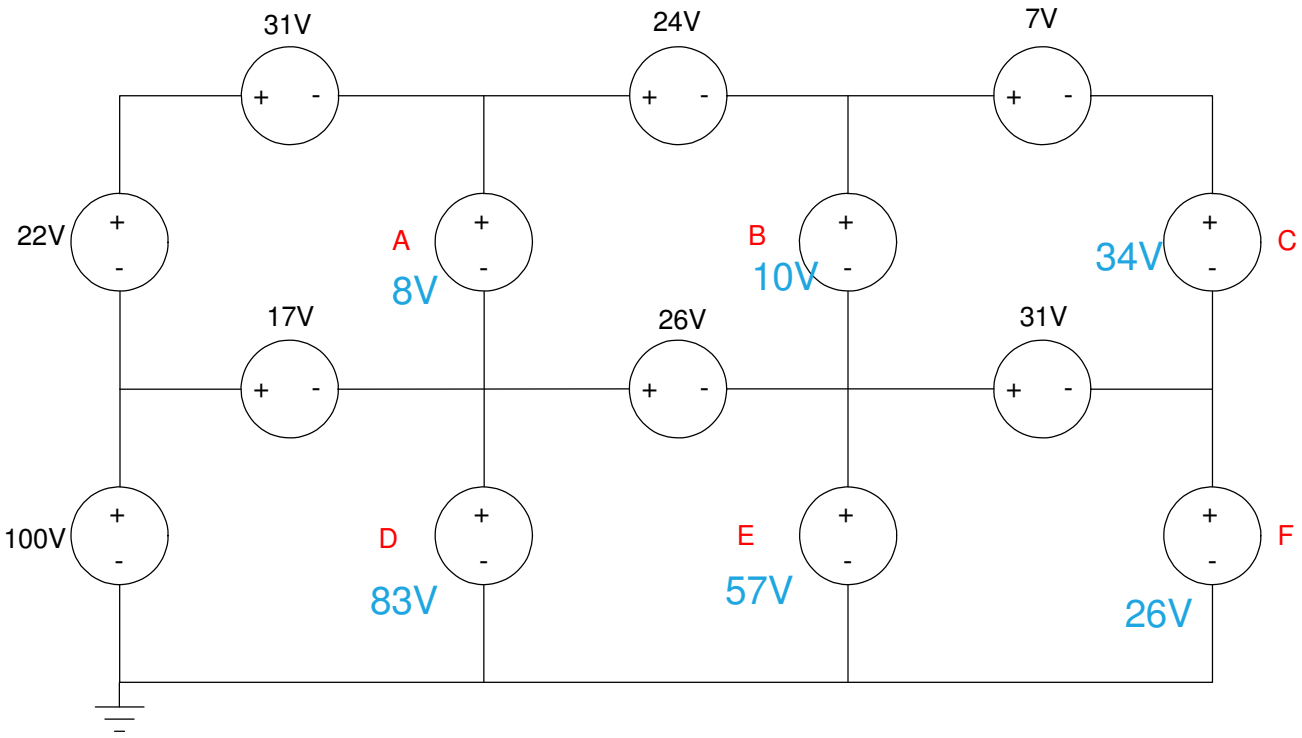
4) Use voltage division to determine V1, V2, and V3



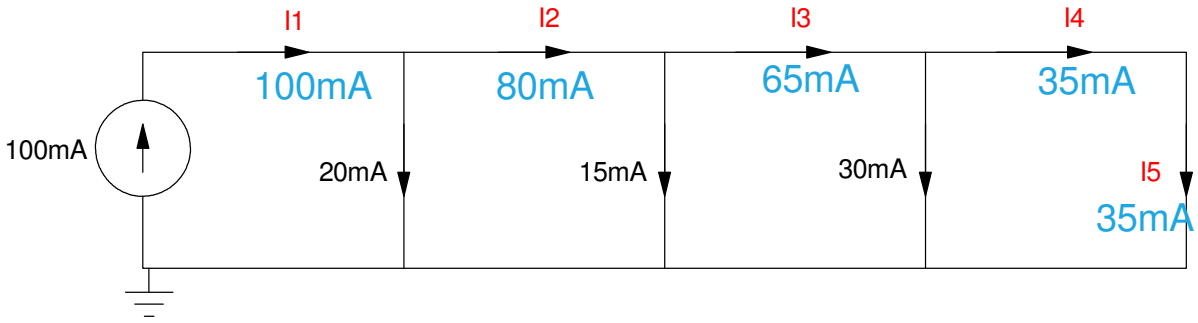
Solutions

Week #5 Handouts for EE 206 Circuits I

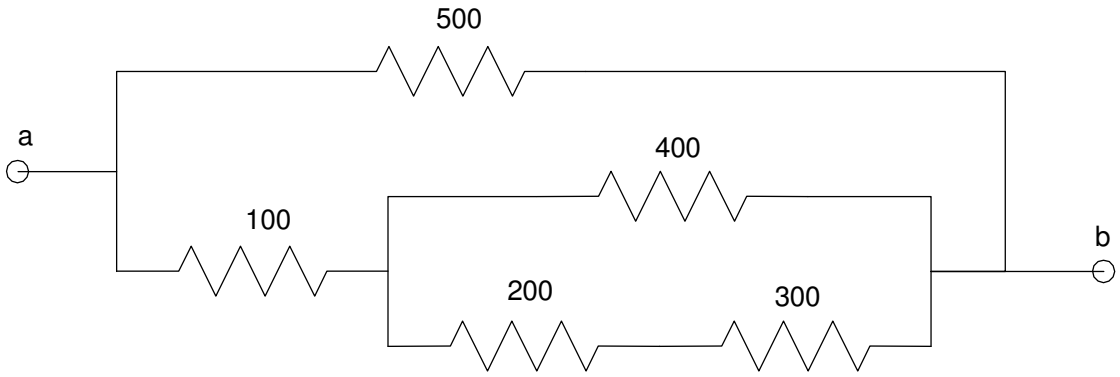
1) Find the unknown votlages using conservation of voltage



2) Find I1..I6 using conservation of current



3) Determine the resistance Rab



300 + 200 = 500

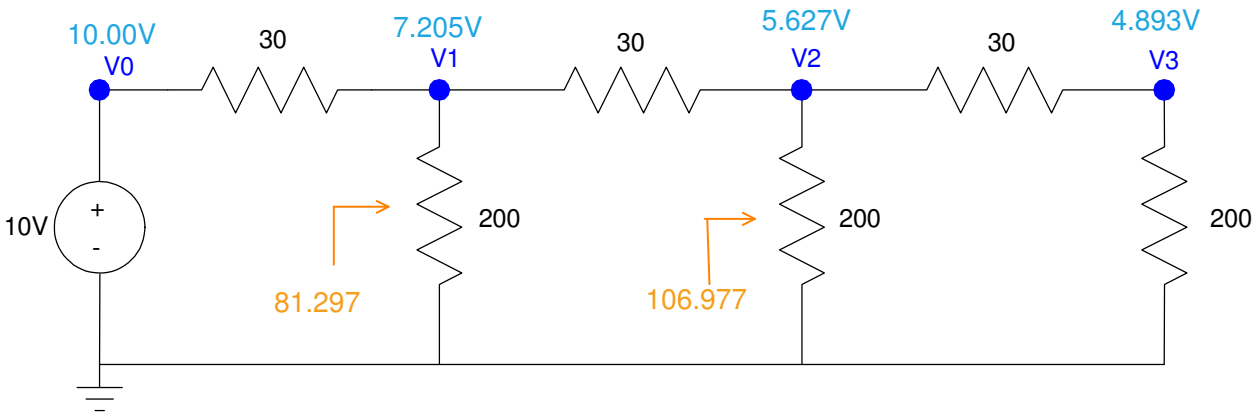
500 || 400 = 222.222

222.222 + 100 = 322 .222

322.222 || 500 = 195.946

ans: Rab = 195.946 Ohms

4) Use voltage division to determine V1, V2, and V3



230 || 200 = 106.977

106.977 + 30 = 136.977

136.977 || 200 = 81.297

Now apply voltage division

$$V_1 = \left(\frac{81.297}{81.297+30}\right)10V$$

$$V_1 = 7.205V$$

$$V_2 = \left(\frac{106.977}{106.977+30}\right)7.205V$$

$$V_2 = 5.627V$$

$$V_3 = \left(\frac{200}{200+30}\right)5.627V$$

$$V_3 = 4.893V$$