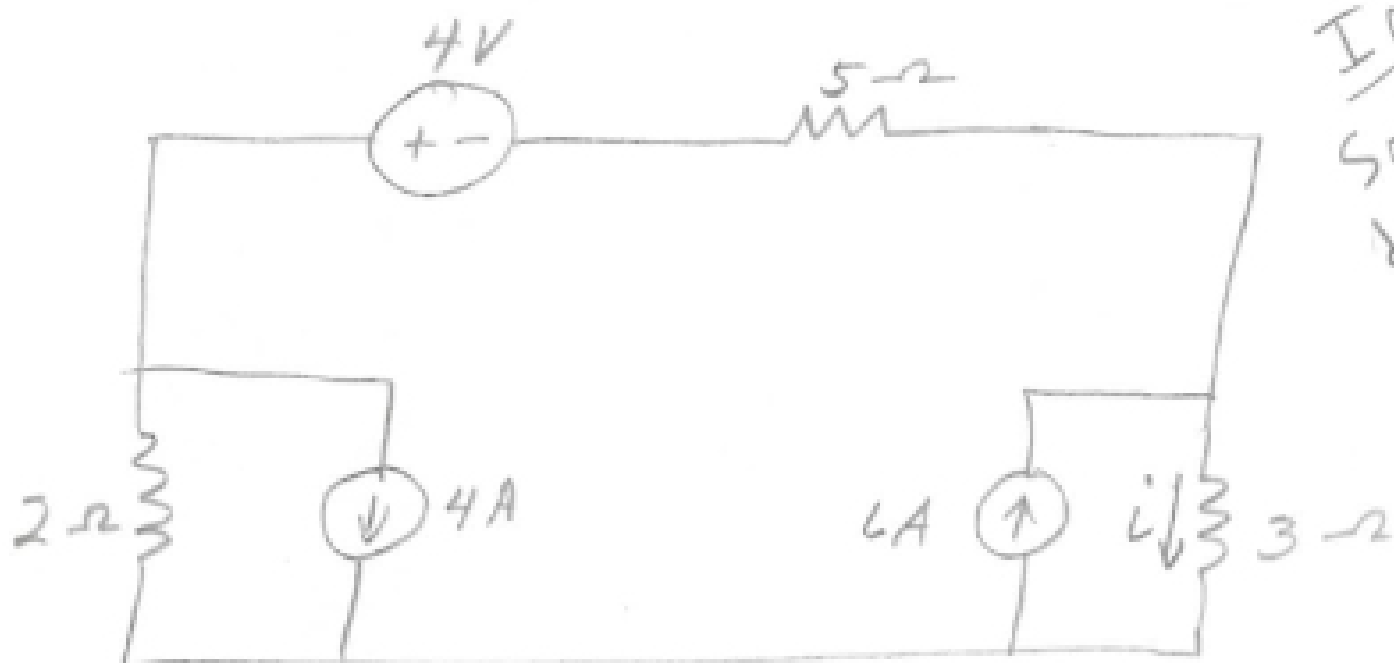


3. EXAMPLE

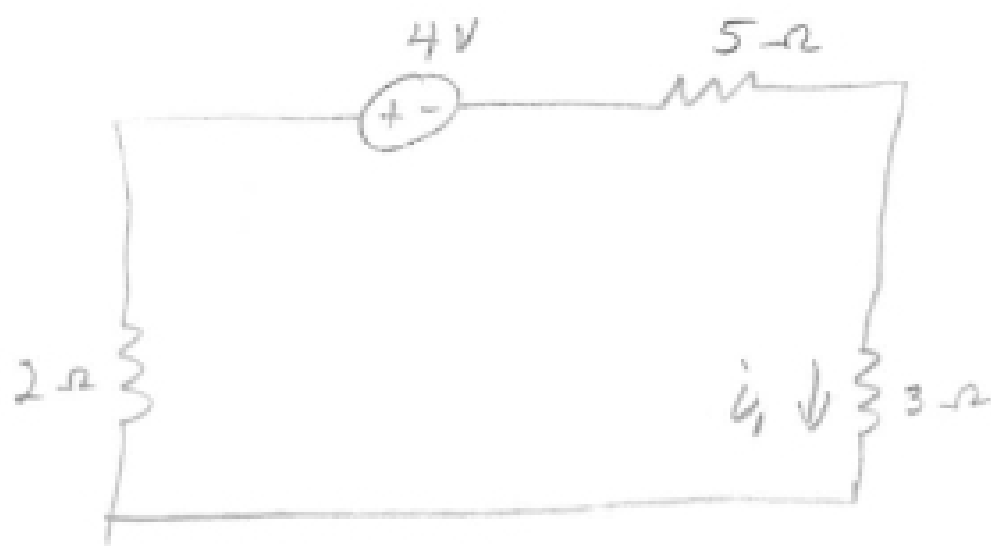
~~Part 5.6~~ (change to -2 and Amps)



Independent
Sources can be
directly taken
out of the
circuit

Find $P_{3\Omega}$ (find i , then $i^2 R$)

a) For 4V source:



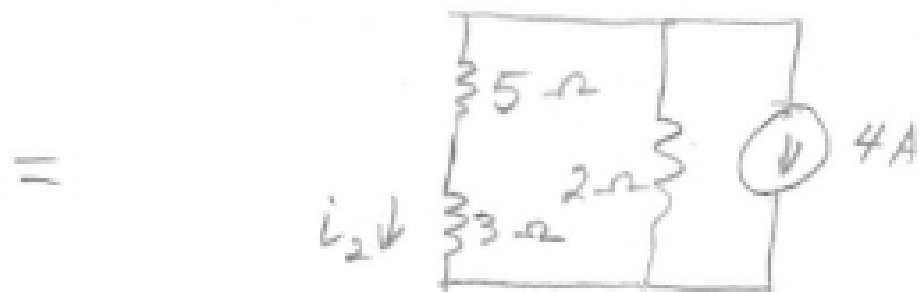
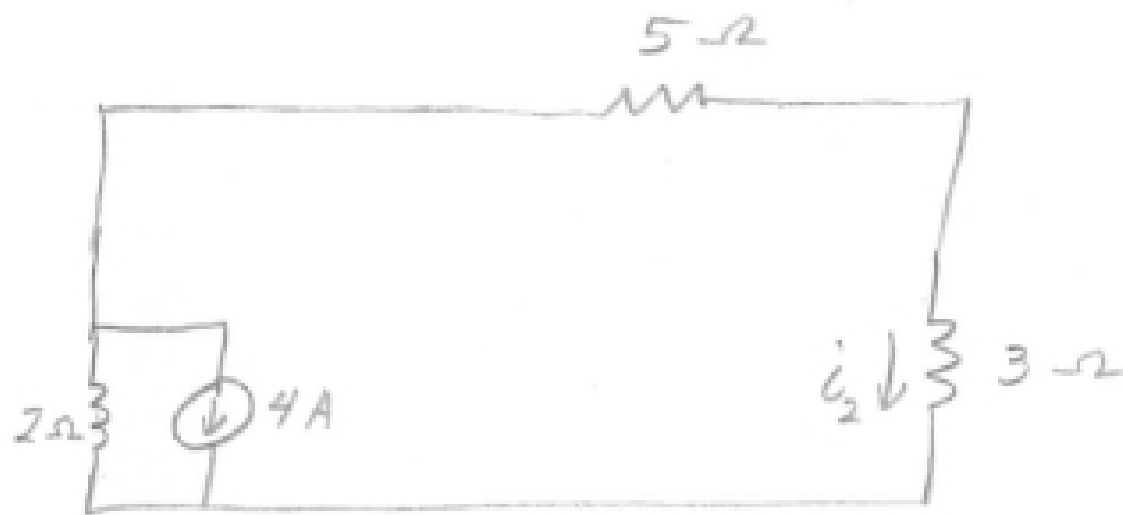
$$\text{KVL} \quad 2i_1 + 4 + 5i_1 + 3i_1 = 0$$

$$10i_1 = -4$$

$$i_1 = -0.4 \text{ A}$$

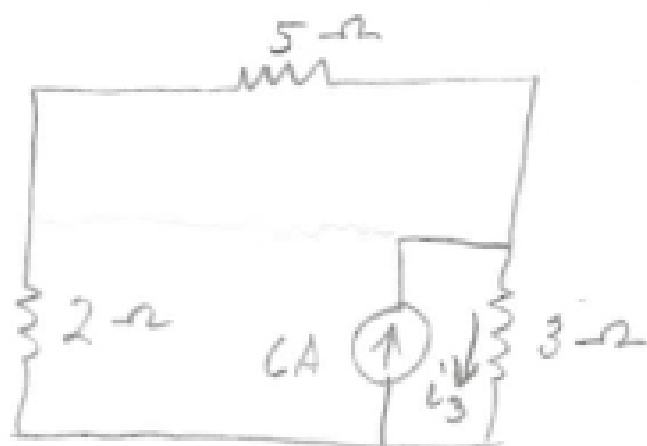
prob ~~5~~ cont.

b) For 4 A source!



Current division $i_2 = -\frac{2}{2+8}(4) = -0.8 \text{ A}$

For 6 A source:



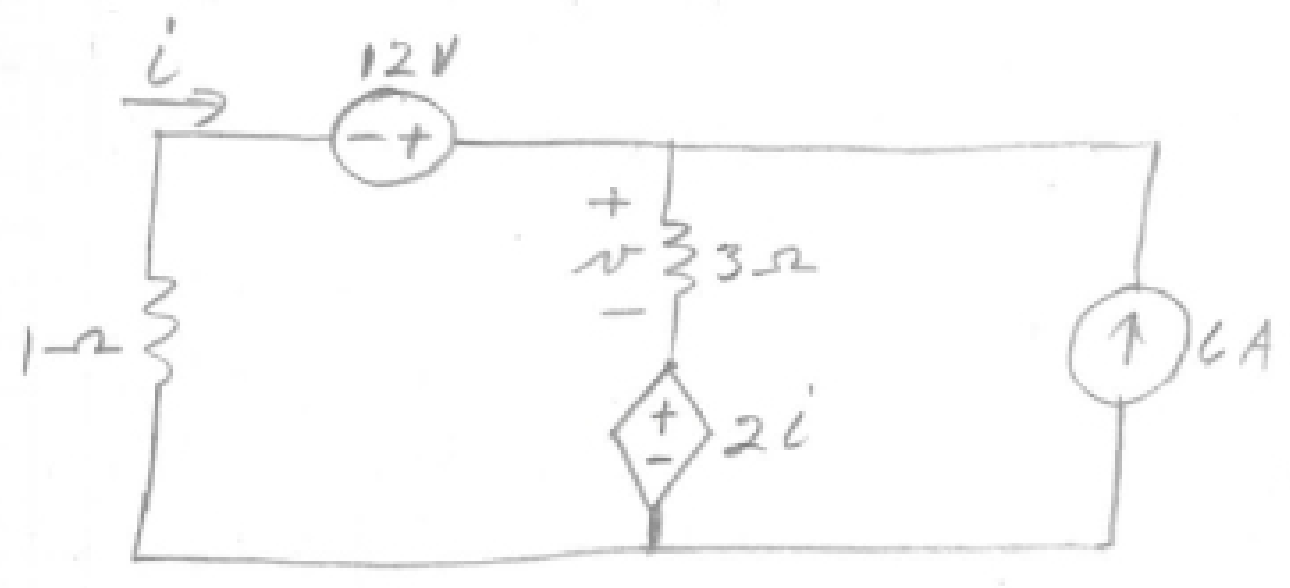
Current division

$$i_3 = \frac{7}{7+3}(6) = 4.2 \text{ A}$$

$$\therefore i = i_1 + i_2 + i_3 = -0.4 - 0.8 + 4.2 = 3 \text{ A}$$

$$\therefore P_{3\Omega} = i^2 R = (3)^2 3 = 27 \text{ W}$$

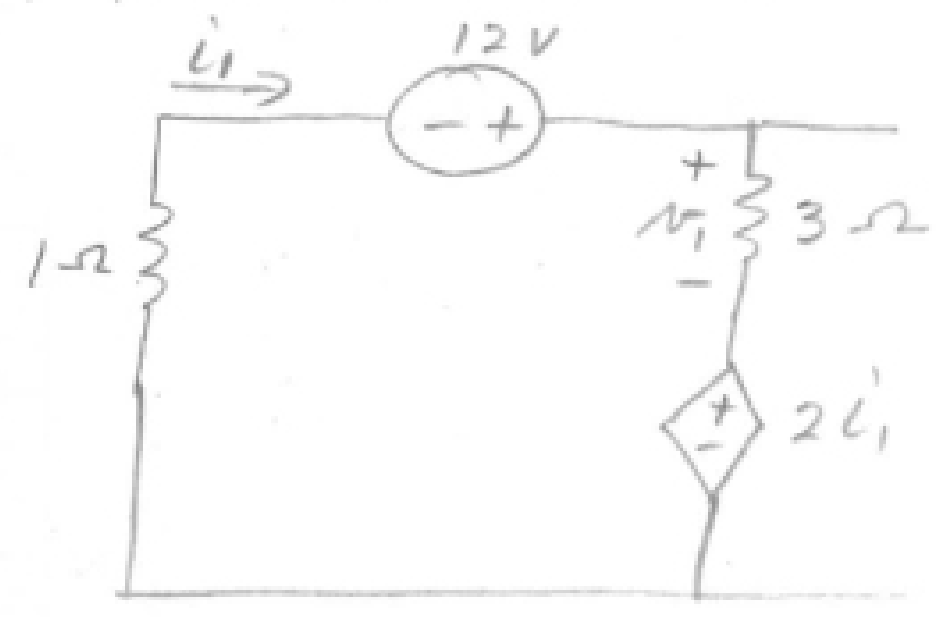
4. Dependent source



Dependent sources
have to be left
in the circuit

Find v , $P_{3\Omega}$:

a) For the 12V source



KVL: $-i_1 - 12 + v_1 + 2i_1 = 0$

$$i_1 = \frac{v_1}{3}$$

$$\frac{v_1}{3} - 12 + v_1 + \frac{2v_1}{3} = 0$$

$$2v_1 = 12$$

$$v_1 = 6V$$