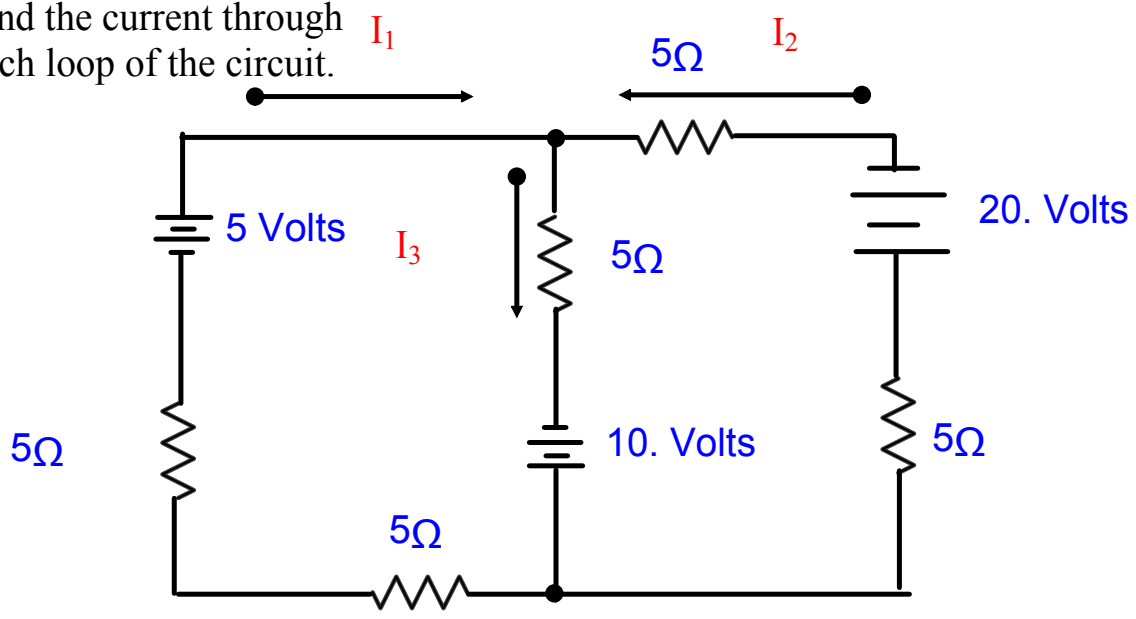


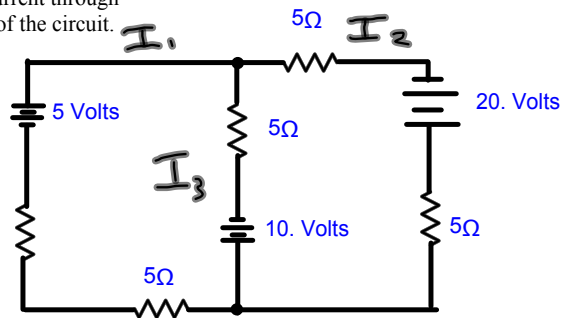
Find the current through each loop of the circuit.



$$I_1 + I_2 = I_3$$

Find the current through each loop of the circuit.

$$-5I_3 + 10 - 5I_1 - 5I_1 + 5 = 0$$



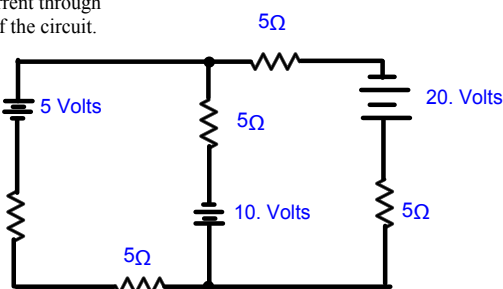
$$-5I_3 + 15 - 10I_1 = 0$$

$$-5I_3 - 10I_1 = -15$$

$$-5I_3 + 10 - 5I_2 - 20 - 5I_2 = 0$$

$$-5I_3 - 10I_2 = +10$$

Find the current through each loop of the circuit.



$$I_1 + I_2 = I_3$$

$$-5I_3 - 10I_1 = -15$$

$$-5I_3 - 10I_2 = 10$$

$$-10I_2 = 10 + 5I_3$$

$$I_2 = -1 - \frac{1}{2}I_3$$

$$I_1 + I_2 = I_3$$

$$I_1 + \left(-1 - \frac{1}{2}I_3\right) = I_3$$

$$I_1 - 1 - \frac{1}{2}I_3 = I_3$$

$$I_1 = \frac{3}{2}I_3 + 1$$

$$-5I_3 - 10I_1 = -15$$

$$-5I_3 - 10\left(\frac{3}{2}I_3 + 1\right) = -15$$

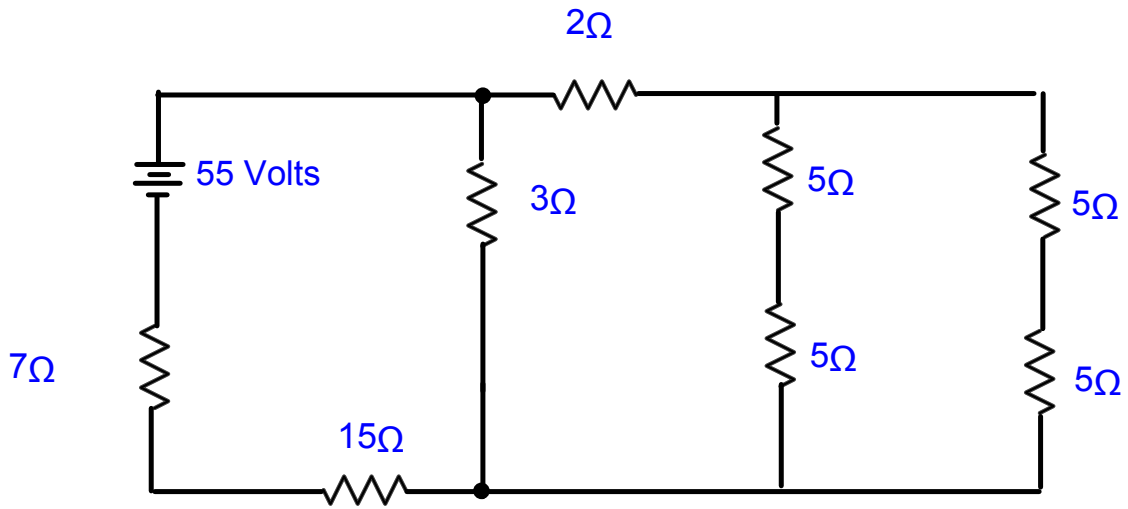
$$-5I_3 - 15I_3 - 10 = -15$$

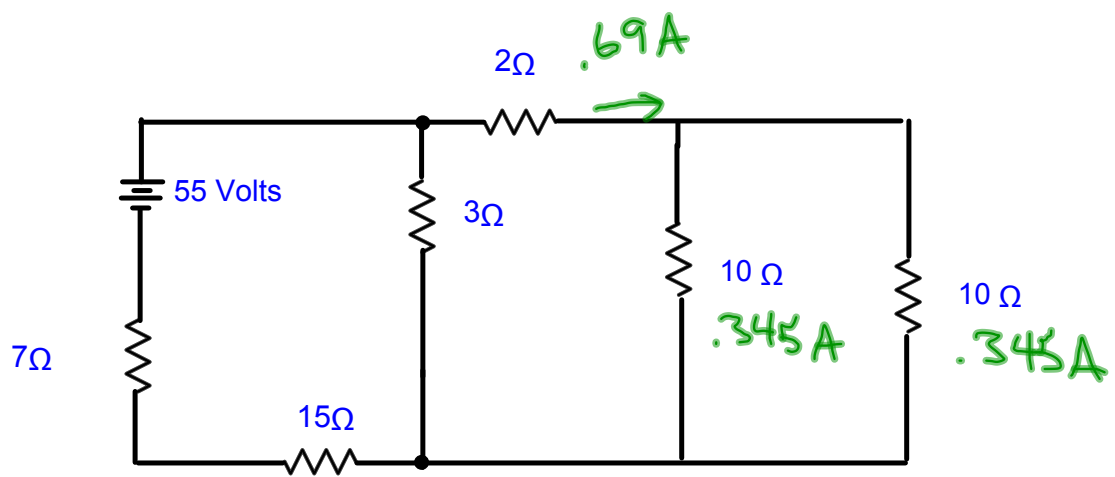
$$-20I_3 = -5$$

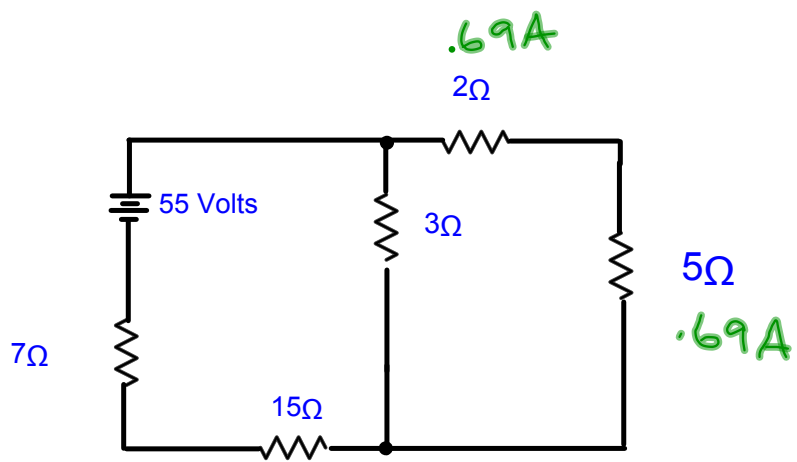
$$I_3 = \frac{5}{20} = \frac{1}{4} \text{ amp}$$

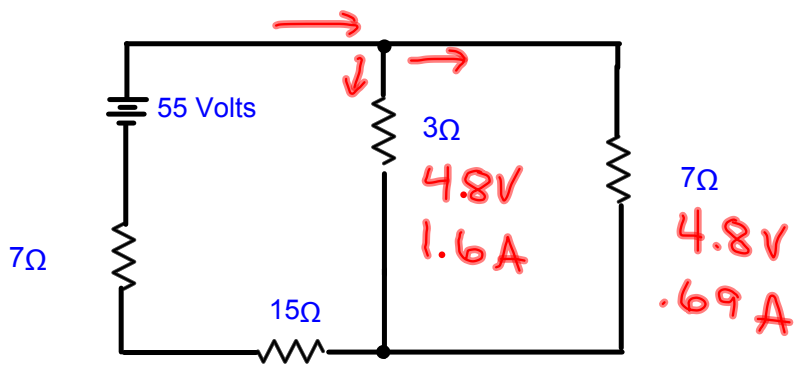
.345 Amp

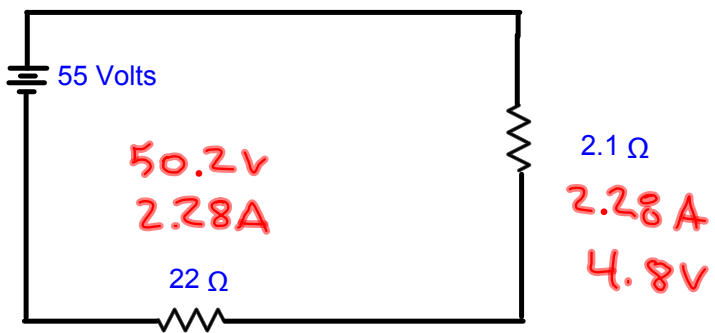
Find the current through the 5 ohm resistors.

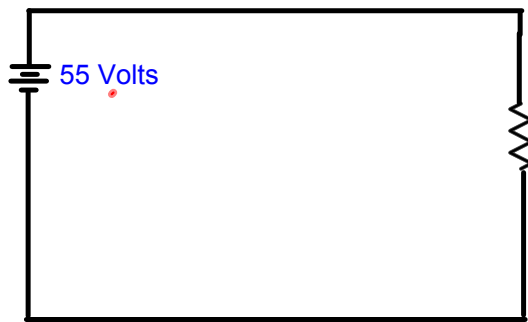












$$I_T = \frac{V_T}{R_T} = \frac{55}{24.1}$$

$$2.28 \text{ A}$$