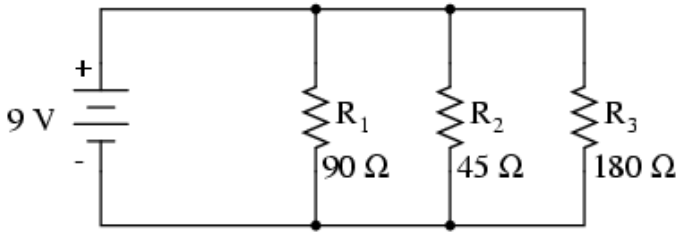
PSC-4011 Quiz#4

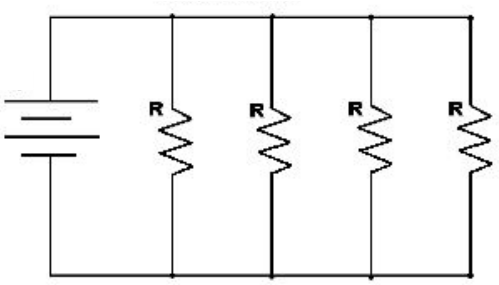
Name:

Date:

1. In the circuit diagram below, determine the value of the current supplied by the power supply. All formulas and calculations must be shown.



2. In the circuit diagram below, determine the value of $\mathcal{E}$, the electromotive force. All formulas and calculations must be shown.



$R_1 = 10\,\Omega$

$R_2 = 15\,\Omega$

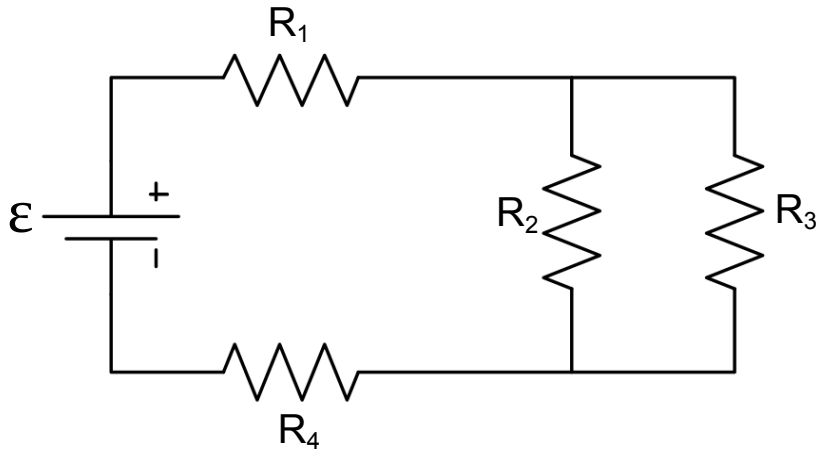
$R_3 = 20\,\Omega$

$R_4 = 5\,\Omega$

$I_t = 13.3$ A

$\mathcal{E} = ?$

3.



V_1 = 60 V

V_3 = 90 V

V_4 = 30 V

I_3= 10 A

I_4 = 15 A

Without calculating, based only on your understanding of voltage and current laws, find the values below. Explain your answers.

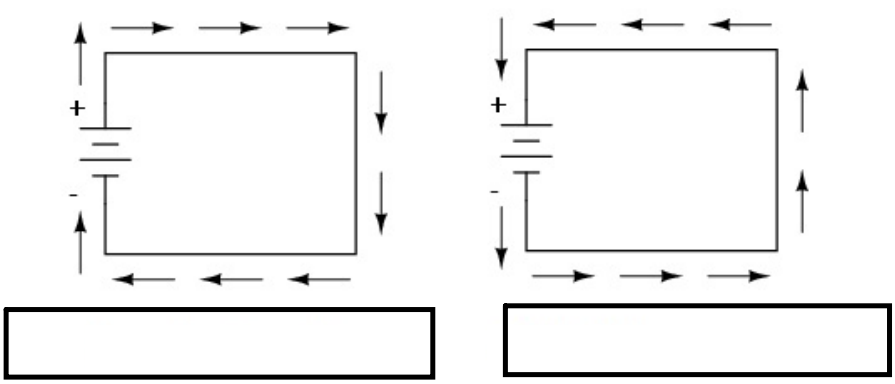
a) V_2 = _____ because: _____

b) I_1 = _____ because: _____

c) I_2 = _____ because: _____

d) $\mathcal{E}$ = _____ because: _____

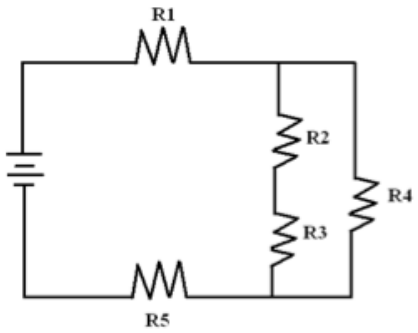
4. One of the diagrams below is depicting the direction of conventional current flow in a circuit, and one is depicting the direction of electron flow in a circuit. Which is which? Place the terms: **electron flow** and **conventional current** in the appropriate rectangles.



5. You want to measure the potential difference across the terminals of R_2 below.

a) What device will you use?

b) On the diagram below, indicate how the device is connected, using the appropriate symbol.

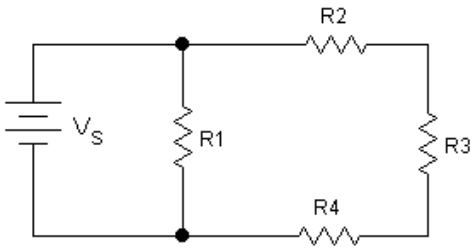


c) Is this device connected in series or in parallel with R_2? Explain your answer.

6. You want to measure the intensity of the current flowing through resistor R_3 in the circuit below.

a) What device will you use?

b) On the diagram below, indicate how the device is connected, using the appropriate symbol.



c) Is this measuring device connected in series or in parallel with resistor R_3? Explain your answer.