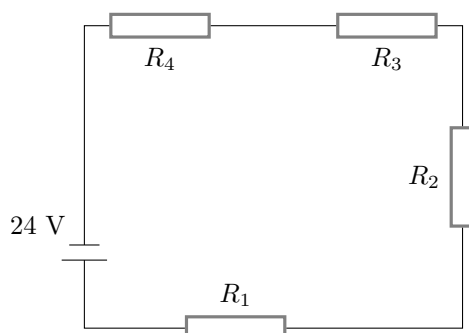


Name _____

Date _____

Circuitry II

1. Three resistors of $100\ \Omega$, $140\ \Omega$, and $80\ \Omega$ are placed in a series circuit.
 - A. Find the equivalent resistance
 - B. If you were to place these three resistors in parallel, what would the equivalent resistance be?
2. 3. The circuit below has a 24V battery connected to resistors $R_1 = 6\ \Omega$, $R_2 = 10\ \Omega$, $R_3 = 9\ \Omega$, $R_4 = 5\ \Omega$. Calculate the equivalent resistance and the net current of the circuit.

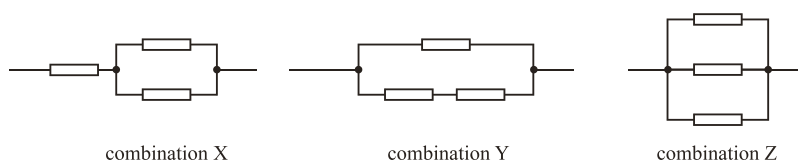


3. Three resistors are connected in series with an 18 V battery. $R_1 = 2\ \Omega$, $R_2 = 4\ \Omega$, $R_3 = 6\ \Omega$
 - A. Draw a schematic diagram.
 - B. Determine the equivalent resistance, and net current for the circuit.
 - C. Determine the current in each resistor, and the potential difference across each resistor. (*Each resistor should have the same current, and the sum of the potential differences should equal the potential difference in the battery*)

4. Three resistors are connected in parallel with a 24 V battery. $R_1 = 6.0\ \Omega$, $R_2 = 12.0\ \Omega$, $R_3 = 18.0\ \Omega$.

- Draw a schematic diagram.
- Determine the equivalent resistance, and net current in the circuit.
- Determine the current in each resistor, and potential difference across each resistor. *(The sum of the currents should equal the net current, and each resistor should have the same potential difference)*

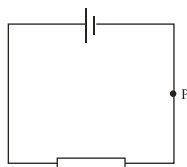
5. The diagrams below show combinations X, Y and Z of three resistors, each resistor having the same resistance.



Which **one** of the following shows the resistances of the combinations in increasing order of magnitude?

	lowest	$\Rightarrow$	highest
A.	Y	X	Z
B.	Z	X	Y
C.	X	Y	Z
D.	Z	Y	X

6. In the circuit below, n charge carriers pass the point P in a time t . Each charge carrier has charge q .



The current in the circuit is given by the expression

- $\frac{q}{t}$
- $\frac{nq}{t}$
- $\frac{qt}{n}$
- nqt