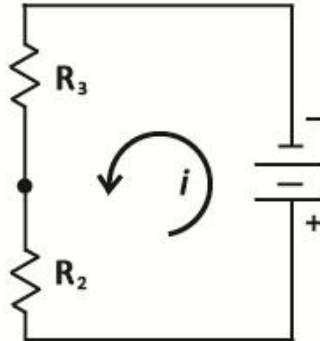


High School VOC Worksheet



1. Given Equation 1, $V_{total} = iR_2 + iR_3$, and a total voltage of 10V, a current of 2A, and resistor 2 value of 2Ω , what is the value of resistor 3?
2. If you increase the value of resistor 2 to 4Ω , what happens to the value of resistor 3?
3. What if you reduce the value of resistor 2 to 1Ω ?
4. If the value of R_2 increases, the value of R_3 _____. If R_2 decreases, R_3 _____. This relationship is called proportionality ($R_2 \propto R_3$).
5. Ohm's Law states that $V_{resistor} = iR_{resistor}$. Plug Ohm's Law into Equation 1 so that it contains only voltage values.

Name: _____ Date: _____ Class: _____

6. When VOCs come into contact with the surface of the sensor, a reaction occurs, and the resistance of resistor 2 decreases. Assume that you are testing a spray cleaner for VOCs. Before you spray the cleaner into your classroom, $V_{total} = 8V$, $i = 2A$, $R_2 = 2\Omega$, and $R_3 = 2\Omega$. You spray the cleaner, and R_2 changes from 2Ω to 1Ω . What happens to V_2 and V_3 ?