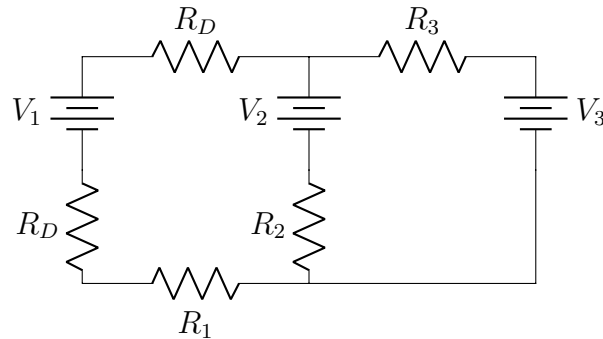
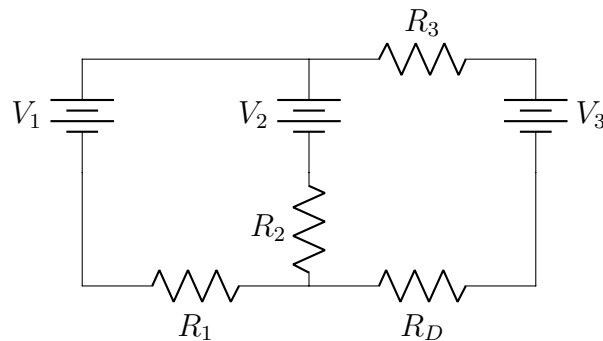


1. Consider the following circuit:



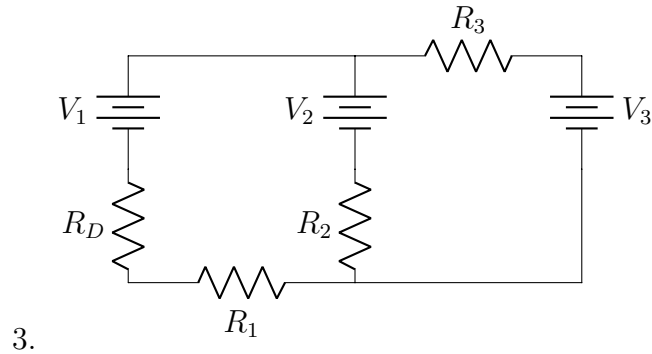
1.

Given the following values: $V_1 = 18\text{ V}$, $V_2 = 15\text{ V}$, $V_3 = 3\text{ V}$, $R_1 = 100\ \Omega$, $R_2 = 470\ \Omega$, $R_3 = 470\ \Omega$, and $R_D = 1000\ \Omega$, determine the current through and the potential difference across each resistor.

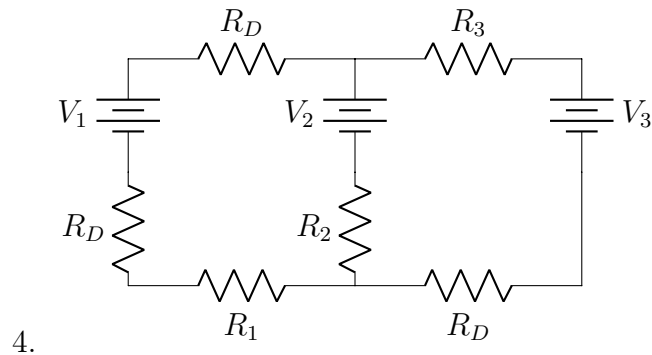


2.

Given the following values: $V_1 = 6\text{ V}$, $V_2 = 9\text{ V}$, $V_3 = 12\text{ V}$, $R_1 = 220\ \Omega$, $R_2 = 220\ \Omega$, $R_3 = 1000\ \Omega$, and $R_D = 560\ \Omega$, determine the current through and the potential difference across each resistor.



Given the following values: $V_1 = 12\text{ V}$, $V_2 = 6\text{ V}$, $V_3 = 18\text{ V}$, $R_1 = 220\ \Omega$, $R_2 = 470\ \Omega$, $R_3 = 220\ \Omega$, and $R_D = 1000\ \Omega$, determine the current through and the potential difference across each resistor.



Given the following values: $V_1 = 6\text{ V}$, $V_2 = 4.5\text{ V}$, $V_3 = 1.5\text{ V}$, $R_1 = 150\ \Omega$, $R_2 = 1000\ \Omega$, $R_3 = 680\ \Omega$, and $R_D = 820\ \Omega$, determine the current through and the potential difference across each resistor.

2. Explain whether or not your answer to the previous question would change if all the resistors were identical.