IEEE's Hands on Practical Electronics (HOPE)

Week 3: Ohm's Law, Equivalent Resistance

Objective:

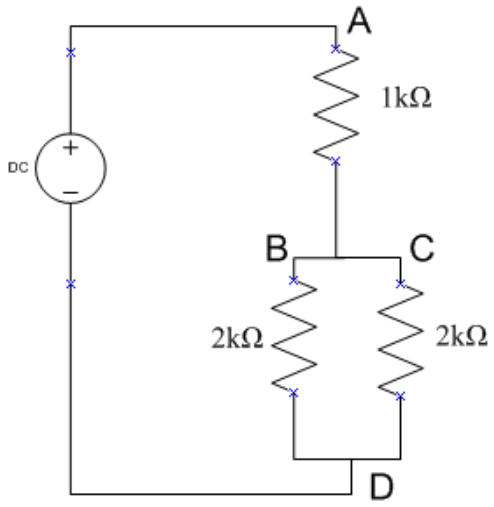
Series and parallel connections. Ohm's law. Equivalent Resistances.

Materials:

1 breadboard
1 9V Battery
1 1kΩ Resistor
2 2kΩ Resistors

Directions:

Make the circuit shown below.



Measure:

Recall the notation V_{xy} means to measure the voltage across points x and y.

$V_{AB} =$ $V_{AC} =$ $V_{BD} =$ $V_{CD} =$ $V_{BC} =$ $V_{AD} =$

Questions:

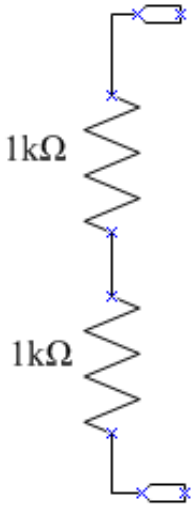
1. Why is $V_{BD} = V_{CD}$?

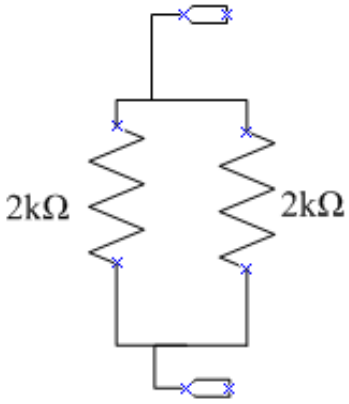
2. Why is $V_{AD} = V_{AB} + V_{BD}$? Is the same relationship true for $V_{AD} = V_{AB} + V_{CD}$

3. What is R_{eq} of the following circuits?

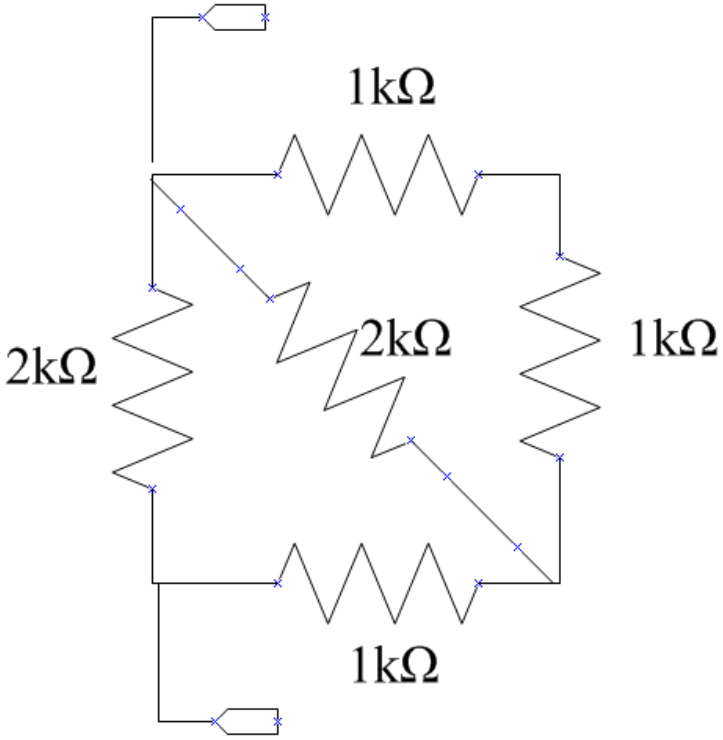
Part 2:

4. What is R_{eq} of the following circuits?





5. Find R_{eq} for this resistive network.



Build it and check.