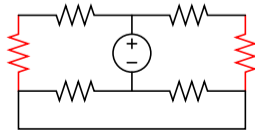
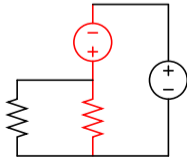
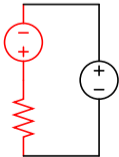
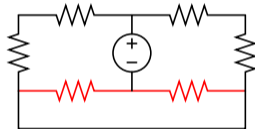
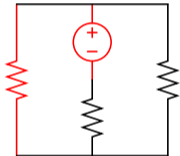
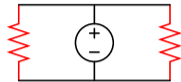
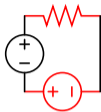
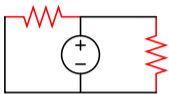


6.200 Circuits and Electronics

Week 2, Lecture B:
Voltage and Current Dividers

<https://circuits.mit.edu>

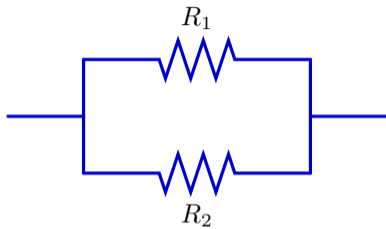
Check Yourself!



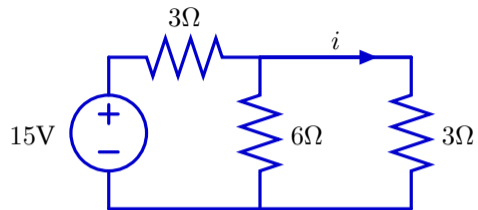
Resistor Combinations



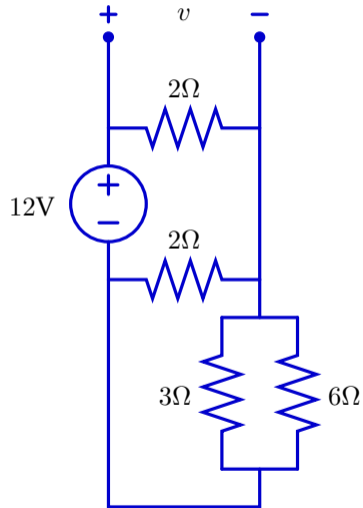
Resistor Combinations



Check Yourself! Solve for i .

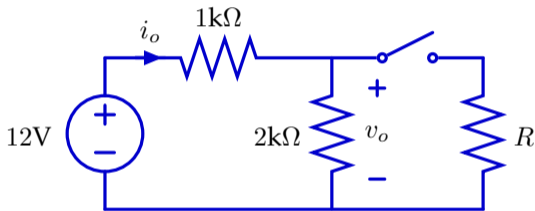


Check Yourself! Solve for v .



Check Yourself!

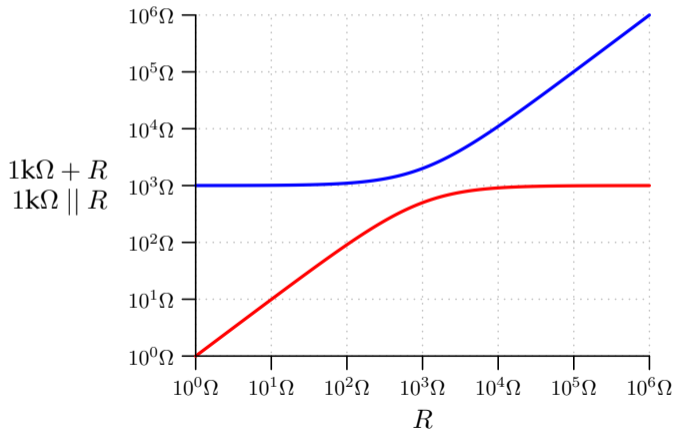
Circuit design is complicated by interactions among the elements. Adding an element changes voltages and current *throughout* the circuit. For example, what happens when the switch is closed in the following circuit (effectively adding the resistor R as a new component)?



0. v_o and i_o stay the same
1. v_o decreases, i_o decreases
2. v_o decreases, i_o increases
3. v_o increases, i_o decreases
4. v_o increases, i_o increases
5. depends the value of R

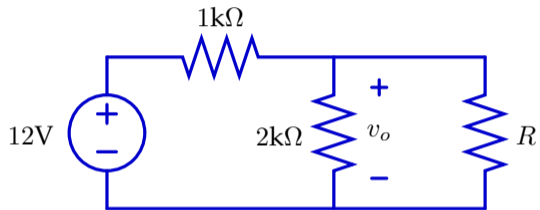
Check Yourself! Equivalent Resistance

One curve represents the equivalent resistance of R in parallel with $1k\Omega$, and the other represents the equivalent resistance of R in series with $1k\Omega$. Which is which?

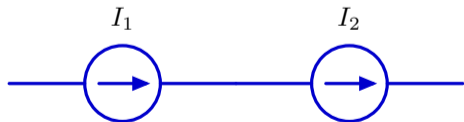
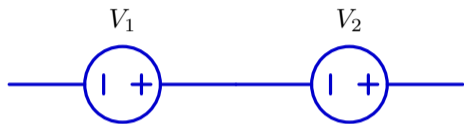


Check Yourself!

Approximate the voltage v in the circuit below:



Series Combinations of Other Components



Parallel Combinations of Other Components

