Linear Circuits

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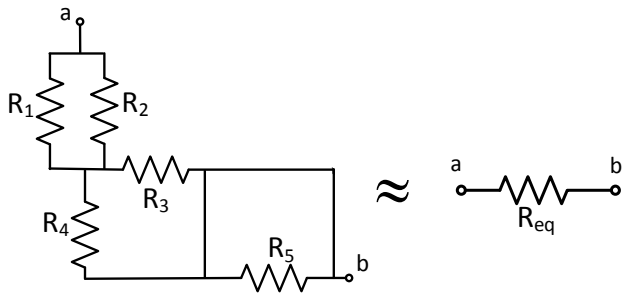
Module 2
Lesson 4: Equivalent Resistance

Equivalent Resistance

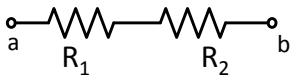
Objective:

- Simplify a combinations of resistors by replacing them with equivalent resistors



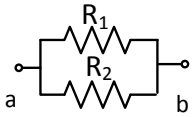
Builds Upon

- Resistors in Series:



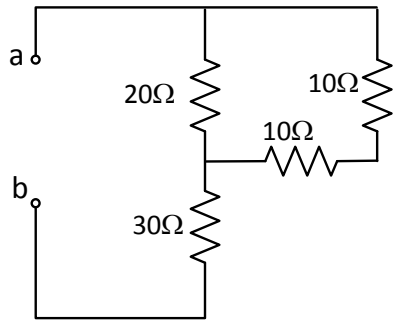
$$R_{eq} = \sum R_k$$

- Resistors in Parallel:

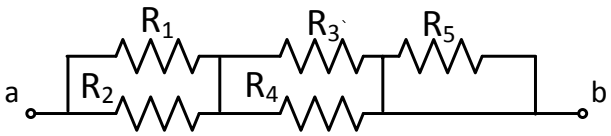


$$R_{eq} = \frac{1}{\sum \frac{1}{R_k}}$$

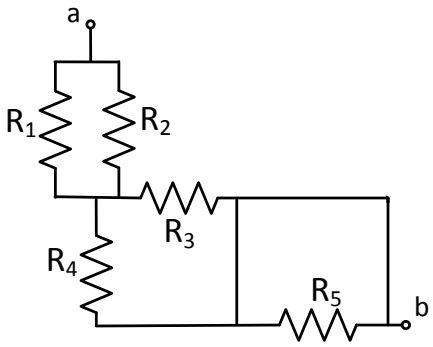
Example

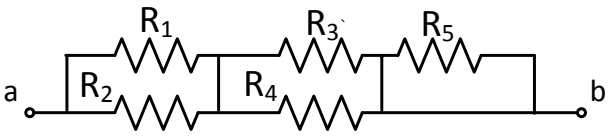


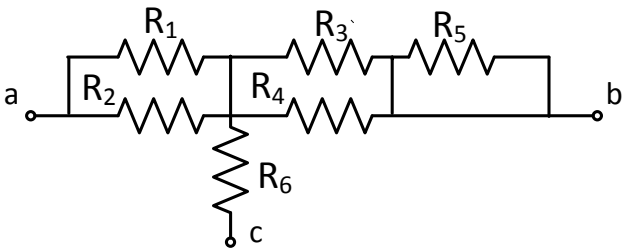
Example



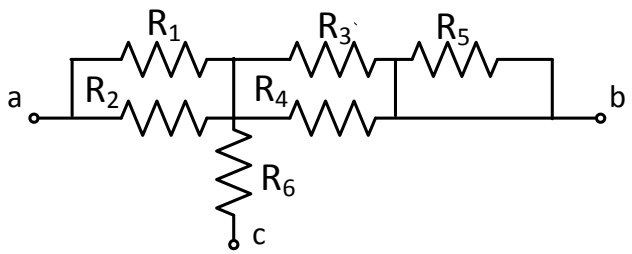
Example







Example



Key Concept

- Replace series and parallel resistor combinations with their equivalent resistances
- Redraw and reduce again, down to one resistor