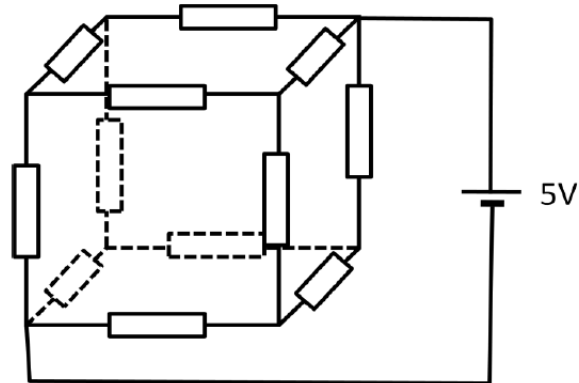


Homework 20

We continue discussing electrical circuits. Below are two problems you can solve them using “brut force” – Kirchgoff’s laws. However, more elegant solution can be obtained using symmetry considerations. I would like to remind you that if there are two or more nodes of the circuit which have same potential, you can connect them (if they are not connected) or disconnect them (if they are connected) and this does not change the currents and voltages of the circuit.

1. Find total current which flows through the cube (see Figure below). Each resistor is 1 Ohm.



2. Find total current flowing through the construction made of three connected metal circles. The resistance of each of the short arcs connecting the nodes is 2 Ohm.

