

# aufgabe\_2.7.9

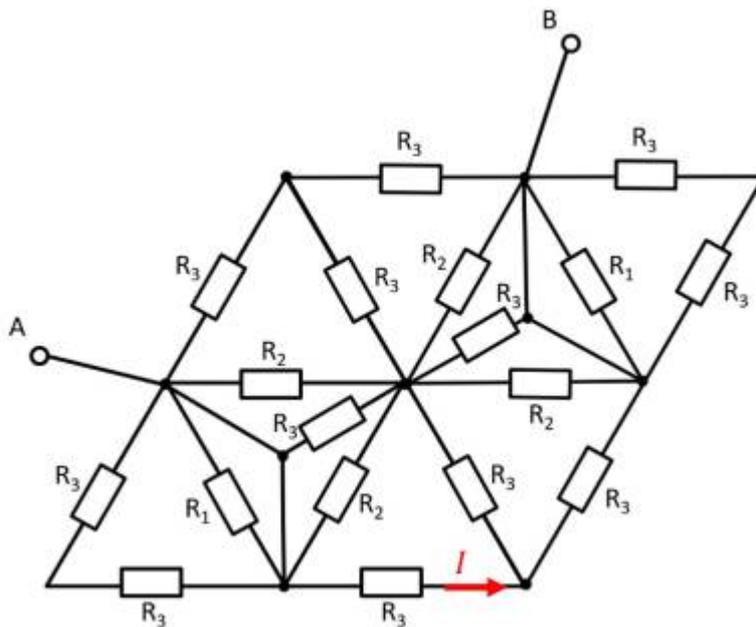
## Student Group

First Name	Surname	Matrikel Nr.

## Table of Contents

Exercise 2.7.9 - Variation: Simplifying Circuits II (written exam task, approx 8% of a 60-minute written exam, WS2020) ..... 2

**Exercise 2.7.9 - Variation: Simplifying Circuits II (written exam task, approx 8% of a 60-minute written exam, WS2020)**



Given is the adjoining circuit with

$$R_1 = 10 \text{ } \Omega$$

$$R_2 = 20 \text{ } \Omega$$

$$R_3 = 5 \text{ } \Omega$$

1. Determine the equivalent resistance  $R_{\text{eq}}$  between A and B by summing the resistances.

Final result

$$R_{\text{ges}} = \frac{20 \text{ } \Omega \cdot 5 \text{ } \Omega}{\frac{3}{2} \cdot 20 \text{ } \Omega + 5 \text{ } \Omega} = 2.858 \text{ } \Omega \rightarrow 2.9 \text{ } \Omega$$

2. Now let the voltage from A to B be:  $U_{\text{AB}} = U_0 = 10 \text{ V}$ . What is the current  $I$ ?

Final result

$$I = \frac{10 \text{ V}}{2 \cdot 5 \text{ } \Omega} = 1 \text{ A}$$

From: <https://wiki.mexle.org/> - MEXLE Wiki

Permanent link: [https://wiki.mexle.org/electrical\\_engineering\\_1/aufgabe\\_2.7.9](https://wiki.mexle.org/electrical_engineering_1/aufgabe_2.7.9)

Last update: 2023/03/19 19:03

