

# task\_klegpky1gugolsq7\_with\_calculation

## Student Group

First Name	Surname	Matrikel Nr.

## Table of Contents

Exercise E1 Electron flow .....	2
---------------------------------	---

current, electrons, chapter1 4

### Exercise E1 Electron flow

How many electrons pass through a control cross-section of a metallic conductor when the current of  $40\text{ mA}$  flows for  $4.5\text{ s}$ ?

Solution

$$\begin{aligned} & 1.1 \cdot 10^{18} \text{ electrons} \end{aligned}$$

$$\begin{aligned} Q &= I \cdot t = 0.04\text{ A} \cdot 4.5\text{ s} = 0.18\text{ As} \\ &= 0.18\text{ C} = 0.18\text{ C} \cdot \frac{1}{1.6022 \cdot 10^{-19}\text{ C/electron}} = 1.1 \cdot 10^{18} \text{ electrons} \end{aligned}$$

From:

<https://first.mexle.te.hs-heilbronn.de/> - MEXLE Wiki

Permanent link:

[https://first.mexle.te.hs-heilbronn.de/ee1/task\\_klegpky1gugolsq7\\_with\\_calculation](https://first.mexle.te.hs-heilbronn.de/ee1/task_klegpky1gugolsq7_with_calculation)

Last update: **2023/04/03 11:21**

