# task_w3wf215v2u98ty07_with_calculation

## Student Group

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efficiency, charges, power, exam ee1 SS2023

**Exercise E9 Efficiency**
**(written test, approx. 14 % of a 60-minute written test, SS2023)**

A battery with a capacity of $Q = 2.6\,\rm Ah$ and a nominal voltage of $U_\rm N = 3.5\,\rm V$ is to be discharged with a constant current of $I_\rm Dis = 3\,\rm A$. The battery has an internal resistance of $R_\rm i = 0.05\,\Omega$.

a) Draw the **equivalent circuit diagram** with the internal resistance and an external load. Label all voltages and currents.

b) Determine the **energy** that can be drawn from the battery in this case.

c) Determine the **efficiency** in this case.

Result:

Solution: