Study performance of AA cells

The lab: First we created a parallel circuit with roughly one ohm of resistance and attached our multi-meter and battery in order to read the voltage of the battery as it runs through the circuit. We checked the voltage at five minute increments and from that, we calculated current and power. From there we then calculated our average current and multiplied it by the time taken to achieve our terminal voltage of 0.3695 ampere-hour.

Data Collected and Calculations

Average Current = 0.739 Amperes

Terminal Voltage= 0.3695 Ampere-Hour

\[ Terminal\ Voltage = 0.739\ \text{Amperes} \times 0.5\ \text{hours} = 0.3695\ \text{Ampere-Hour} \]

Ampere-Hour during one flash charge cycle= 0.0018 Ampere-Hour

Ampere-Hour during one customer cycle= 0.0504 Ampere-Hour

\[ = 0.0018\ \text{Ampere-Hour} \times 28\ \text{flash cycles} = 0.0504\ \text{Ampere-Hour} \]

Number of Customer Cycles per Battery= 7 customer cycles

\[ = \frac{0.36958}{0.0504} \approx 7\ \text{customer cycles} \]

Lab Setup