Tuesday Reading Assessment: DC Circuits

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1 Memory Bank

- $V = iR$ ... Ohm's Law, with V for voltage, i for current, and R for resistance.
- $P = iV = i^2 R_{tot} = V^2/R_{tot}$ ... The power consumption is the product of current and resistance.
- $R_{tot} = R_1 + R_2$ ... Total resistance of two resistors in series.
- $R_{tot}^{-1} = R_1^{-1} + R_2^{-1}$ ... Total resistance of two resistors in parallel.

2 Parallel Resistors, Power Consumption

1. Consider Fig. 1. (a) What is the current from the battery? (b) What is the total power consumption? (c) How long will the battery last?

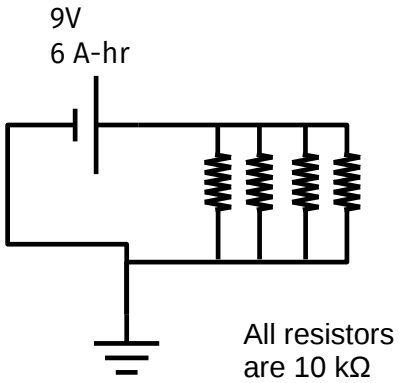

Figure 1: A network of four resistors in parallel, all with $R = 10\text{k}\Omega$.