Additional Problem VIIIb for Physics 102

This problem is part of your written homework for chapter 25.

A typical AA battery delivers a nearly constant voltage of 1.5 V, and stores about $10^4$ J of energy. Consider a pocket calculator that runs on AA batteries—you or some of your classmates probably have a calculator of this type.

a) Estimate the amount of **time** it takes to use up a new set of batteries in such a calculator. Explain how you came up with your estimate. (Note: this part is supposed to be an estimate based on experience, not a calculation.)

b) Use your result from part (a) to estimate the **resistance** of the calculator. Show your work and explain your reasoning. (Hint: think about power. What’s the relationship between power and energy?)