

hhh.26.29_31.pdf

26.29 The internal resistance can be found from the formula

Emf stands for electro- motive force and is the same thing as open circuit voltage (in this case the V_{open})

$$V_{open} = IR_{internal} + V_{terminal}$$

$IR_{internal}$ is the voltage drop across the battery itself

26.30 Same thing as 26.29, just solve for R_i

26.31 The one ohm resistor is in series with the internal resistance of the battery. So the total resistance of the entire circuit is

$$1 + R_{internal}$$

Thus the current I is equal to

$$\frac{Emf}{1 + R_{int}}$$

plug this into

$$V_{open} = IR_{internal} + V_{terminal} \text{ and solve for } R_{internal}$$