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89.456 - APPLIED GEOPHYSICS
CHAPTER 5 PROBLEMS

1. A 120 V circuit has a resistance of 10 ohms. Calculate the current flow.
2. A slab of rock is 1 m on a side. A current is applied to the slab. The measured voltage drop is 20 V and the current is 0.15 A.
 - a. Calculate the resistivity of the rock.
 - b. Calculate the conductivity of the rock.
3. Consider the current flow from a single electrode in a homogeneous earth. At a distance of 10 m the measured potential is 10 V. The input current is 1 A. Calculate the apparent resistivity of the subsurface.

4. In a two layer sequence the top layer has $\rho_a = 50 \Omega \cdot m$ and the bottom layer has $\rho_a = 200 \Omega \cdot m$.
- If the current flow lines approach the interface at an angle of 50° , calculate the angle of current flow in the bottom layer.
 - Calculate the reflection coefficient.