

Special Problem 5-2.5

A resistor with length 3 and radius 1 is aligned with the z-axis (but note that it is **not** centered at the origin).

This cylinder is made of material with **conductivity**:

$$\sigma(\vec{r}) = \frac{3\rho}{\pi} \left[\frac{1}{\Omega \cdot m} \right]$$

The electric potential within this resistor is:

$$V(\vec{r}) = -4z \quad [\text{Volts}]$$

Determine the **numeric** value of the **resistance** of this cylinder.

