A rectangular shaped material is 100 m long and it has cross sectional dimensions of 2 m by 3 m. When it is connected to a 300 V battery, a current of 2 A flows. What is its resistivity?

\[ V = I R \]

\[ R = \frac{V}{I} = \frac{300}{2} = 150 \Omega \]

\[ R = \frac{\rho L}{A} \]

\[ \rho = \frac{R A}{L} = \frac{(150)(2)(3)}{100} = 9 \Omega \cdot m \]