

Special Problem 5-2.1

The current density in a material with conductivity $2.0 \text{ } [\Omega \cdot \text{m}]^{-1}$ is:

$$2x \hat{a}_x + 4y \hat{a}_y \quad \frac{\text{A}}{\text{m}^2}$$

Find the electric potential difference between point $\bar{r}_a = 0$ and $\bar{r}_b = 2 \hat{a}_x$.