

Speical Problem 2-5.24

Contour C is a straight line extending from point P_a to point P_b .

Point P_a is located at $\vec{r}_a = -\hat{a}_x - \hat{a}_y + 2\hat{a}_z$.

Point P_b is located at $\vec{r}_b = 2\hat{a}_x + 2\hat{a}_y + 2\hat{a}_z$.

Note contour C intersects the z -axis!

Vector field $\mathbf{A}(\vec{r}) = \frac{r^2 \cos \phi}{\sin \theta} \hat{a}_r$

Evaluate the contour integral $\int_C \mathbf{A}(\vec{r}) \cdot d\vec{\ell}$

