

66. With cylindrical symmetry, we have, external to the conductors,

$$|\vec{B}| = \frac{\mu_0 i_{\text{enc}}}{2\pi r}$$

which produces $i_{\text{enc}} = 25$ mA from the given information. Therefore, the thin wire must carry 5 mA in a direction opposite to the 30 mA carried by the thin conducting surface.