Conductor with a uniform cross section of complex shape. Fig. Q3.4 shows the cross section of a long homogeneous metallic conductor carrying a steady current. The current densities $\mathbf{J}_1$ and $\mathbf{J}_2$ in the two parts of the conductor (see the figure) are related as:

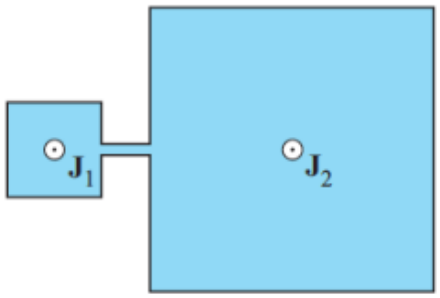

Figure Q3.4 Cross section of a homogeneous conductor with a steady current; for Question 3.11.

(A) $\mathbf{J}_1 < \mathbf{J}_2$.
(B) $\mathbf{J}_1 = \mathbf{J}_2$.
(C) $\mathbf{J}_1 > \mathbf{J}_2$.

Solution: (B)
Answer: (B)