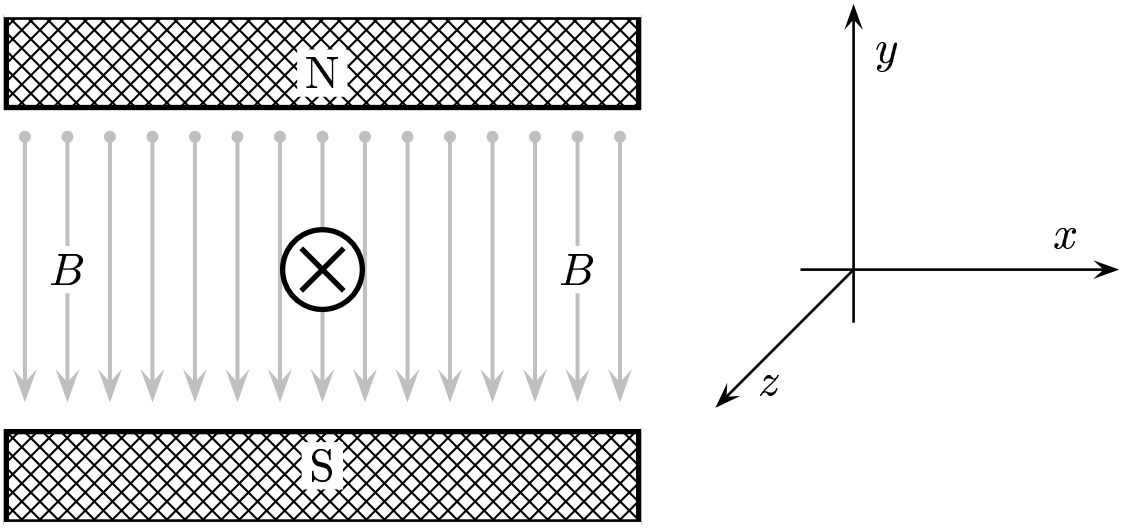
Given: An external magnetic field $\vec{B}$ which is downward $\downarrow$, $(-\hat{\jmath})$.

A current I which flows into the page $\otimes$, $(-\hat{k})$.



Determine the direction of force.

A) The direction of force is $+\hat{\imath}$.

B) The direction of force is $-\hat{\imath}$.

C) The direction of force is $+\hat{\jmath}$.

D) The direction of force is $-\hat{\jmath}$.

Here we want to determine the direction of cross-product $\Delta\vec{F} = I\ \Delta\vec{\ell} \times$

B. From the directions given, we have $(-\hat{k}) \times (-\hat{\jmath}) = -\hat{\imath}$.

Answer **B**.