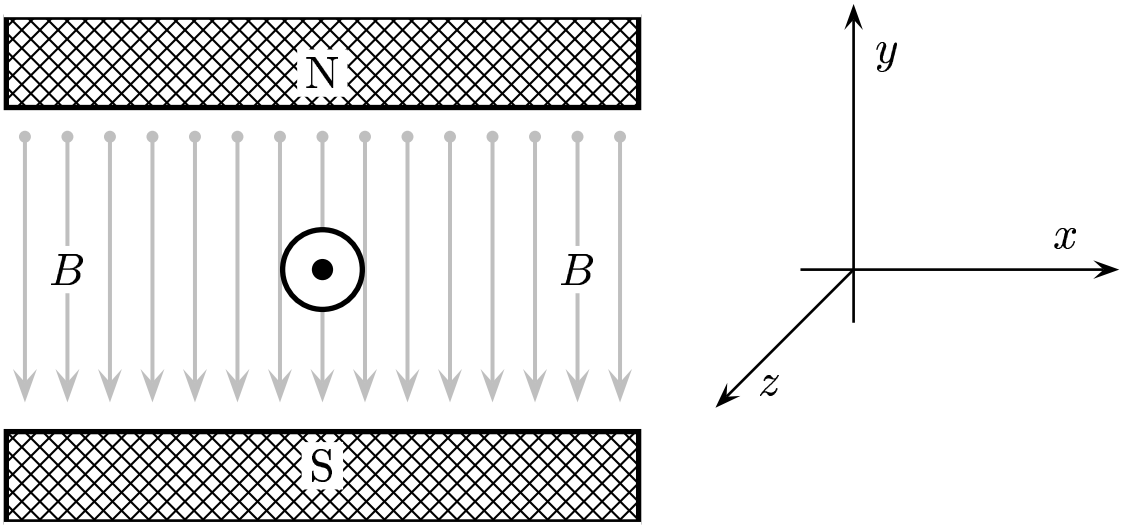
Given: An external magnetic field $\vec{B}$ which is downward $\downarrow$, $(-\hat{\jmath})$.

A current I which flows out of the page $\odot$, $(\hat{k})$.



Determine the direction of the 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 $\Delta\vec{F} = I\Delta\ell \times \vec{B}$.

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

Answer **A**.

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