**Given:** A metal rod is rotating counter-clockwise with one end at $O$ and the other end (denoted end) swinging around in a circle (see the dashed circle in the figure below). The magnetic field $B$ is constant and into the page.

Which end of the rotating rod has the higher electric potential?

A) $V_O < V_{end}$  
B) $V_O \approx V_{end}$  
C) $V_O > V_{end}$

By inspection, the direction of the vector-cross-product (the magnetic force on $q$); i.e., on a positive charge on the rod, should be directed radially inward. So a positive charge is being “pushed” by the magnetic field from the end to the middle “$O$”. This implies $V_O > V_{end}$.

Answer C.