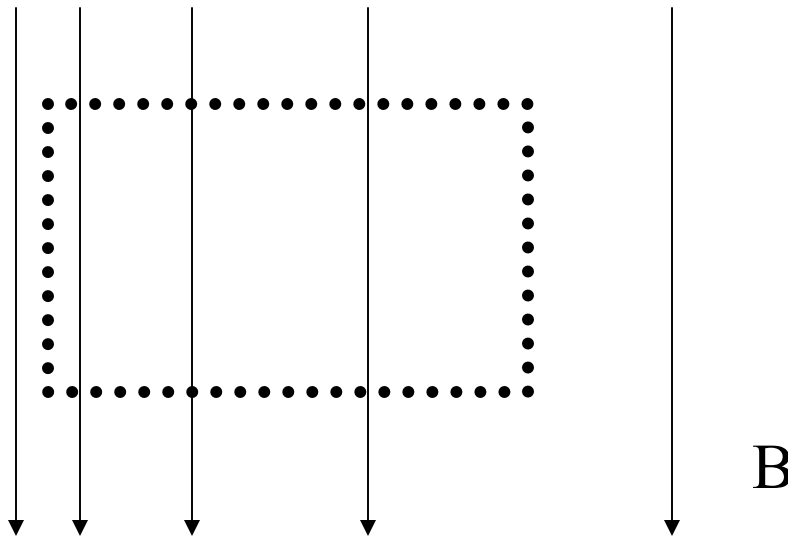


A magnetic field with uniform direction but non-uniform magnitude is directed down the page, as indicated in the figure. If we calculate the line integral of the magnetic field clockwise around the amperian loop shown, what will be the sign of the result?



1. positive
2. no sign (the line integral is zero)
3. negative

Consider six wires coming into or out of the page, all with the same current. Rank the line integrals of the magnetic field from largest to smallest for the paths depicted below, where the direction of the integration is indicated by the arrow heads.

1.  $B > C > D > A$
2.  $B > C = D > A$
3.  $B > A > C = D$
4.  $C > B = D > A$
5.  $C > A > B = D$

