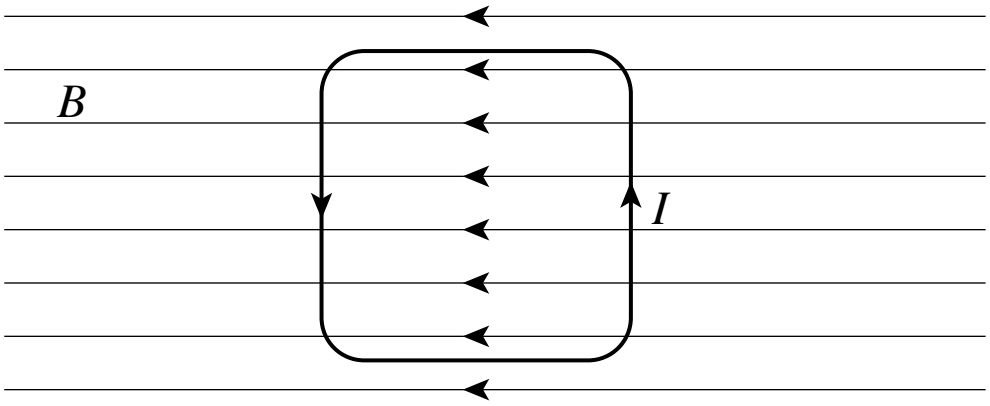
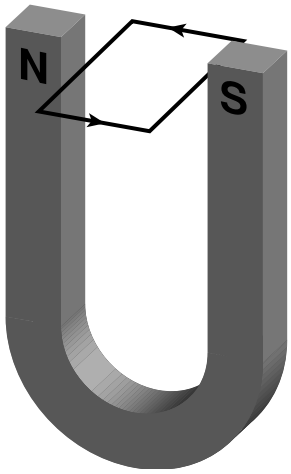
A current loop is placed in a magnetic field as shown below. As the loop begins to rotate, the magnitude of the torque on the loop



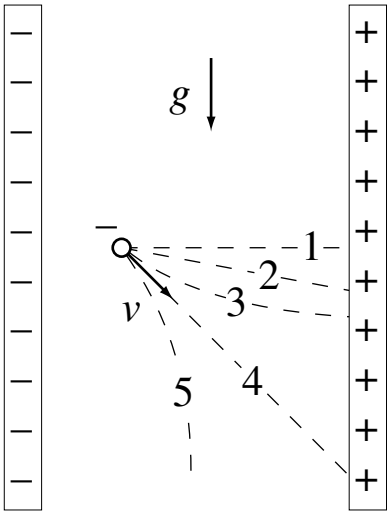
1. increases.
2. stays the same.
3. decreases.

A current loop is placed between the poles of a horseshoe magnet, as shown below. The loop tends to



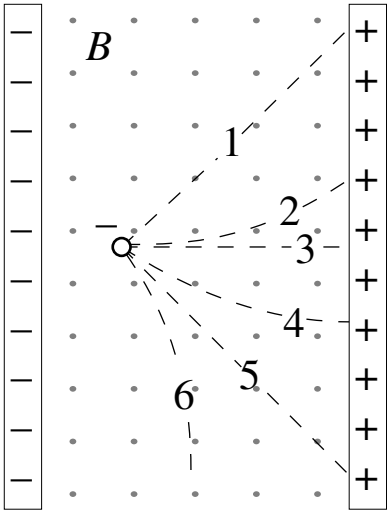
1. rotate, left side up
2. rotate, right side up
3. rotate, front side up
4. rotate, rear side up
5. none of the above - it stays in place
6. other

Starting from rest, a negatively charged particle moves between the plates of a capacitor under the combined influence of gravity (downward) and the electric field in the capacitor. If, at the instant shown, the particle has the instantaneous velocity represented by the arrow, which of the paths shown best represents the trajectory of the particle?



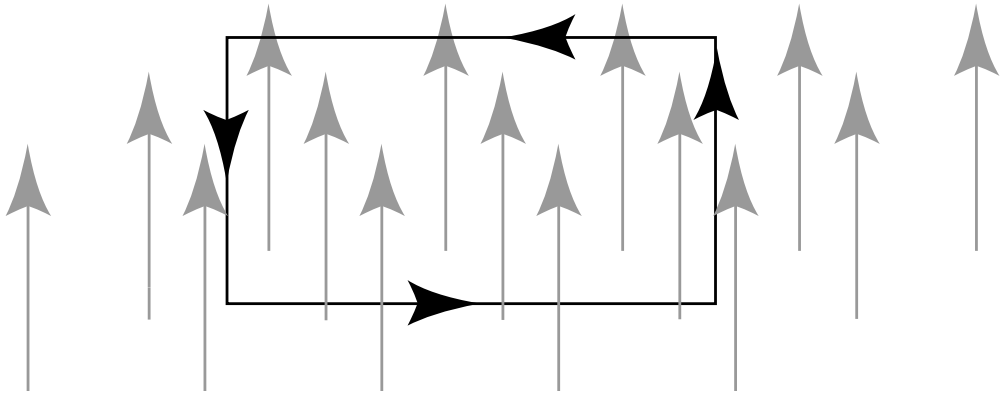
1. 1
2. 2
3. 3
4. 4
5. 5

A negatively charged particle is released from rest between the plates of a capacitor under the combined influence of a magnetic field B (directed out of the page) and the electric field in the capacitor. Which of the paths shown best represents the trajectory of the particle? (ignore gravity)



1. 1
2. 2
3. 3
4. 4
5. 5
6. 6
7. the particle remains at rest
8. the particle moves out of the plane of drawing

A rectangular loop is placed in a uniform magnetic field with the plane of the loop parallel to the direction of the field. If a current is made to flow through the loop in the sense shown by the arrows, the field exerts on the loop:



1. a net force.
2. a net torque.
3. a net force and a net torque.
4. neither a net force nor a net torque.