Question 1

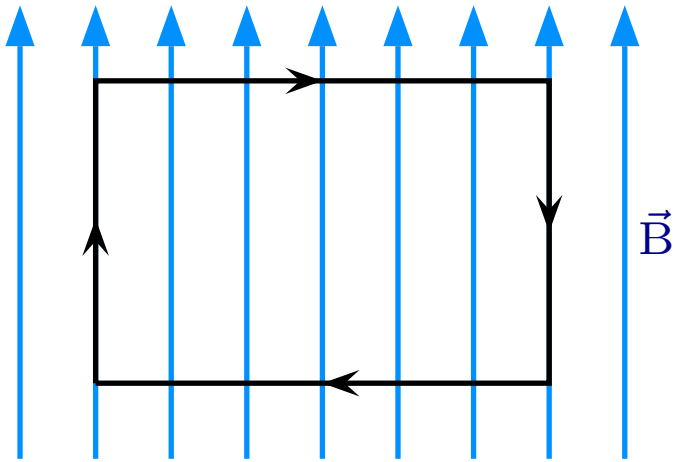
Three wires are perpendicular to the page with currents as illustrated. The currents are equal in magnitude.

Which of the following is true?

1. The magnetic field at A is larger than at B.
2. The magnetic field at A is smaller than at B.
3. The magnetic field at A is the same as B.

Question 2

A rectangular loop is placed into the indicated magnetic field.

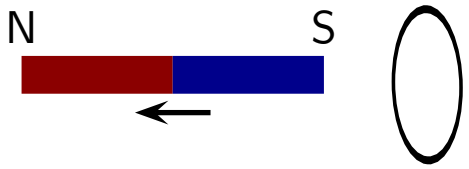


Let $\vec{F}_{net}$ be the net force on the loop and $\vec{\tau}_{net}$ be the net torque on the loop. Which (choose one) of the following is true?

1. $\vec{F}_{net} = 0$ and $\vec{\tau}_{net} = 0$.
2. $\vec{F}_{net} = 0$ and $\vec{\tau}_{net} \neq 0$.
3. $\vec{F}_{net} \neq 0$ and $\vec{\tau}_{net} = 0$.
4. $\vec{F}_{net} \neq 0$ and $\vec{\tau}_{net} \neq 0$.

Question 3

A bar magnet lies along the axis of a circular loop of wire. The magnet is pulled away from a loop in the indicated direction.



Which of the following is true as the magnet moves away from the loop?

1. The current in the loop is counterclockwise (viewed from right).
2. The current in the loop is clockwise (viewed from right).
3. There is no current in the loop.