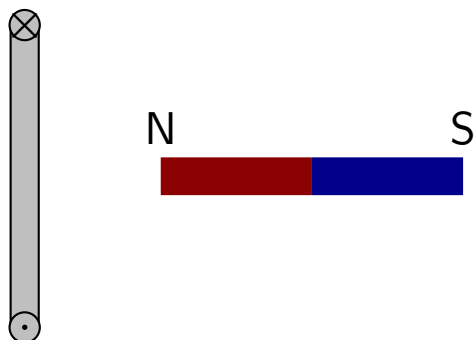


## Question 1

A bar magnet is placed next to a loop that carries a current. A side view is illustrated.

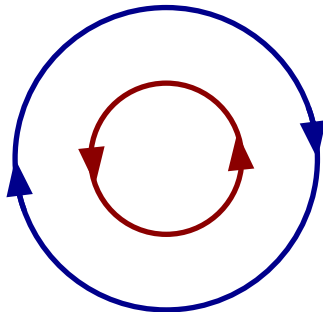


Which of the following represents the direction of the force exerted by the loop on the magnet?

1.  $\rightarrow$
2.  $\leftarrow$
3.  $\uparrow$
4.  $\downarrow$
5. Into screen/board
6. Out of screen/board

## Question 2

Two infinitely long solenoids each carry the same current. Each has the same length and the same number of coils. The radius of the outer solenoid is double that of the inner solenoid. One solenoid is inside the other. When viewed end-on, they appear as illustrated.

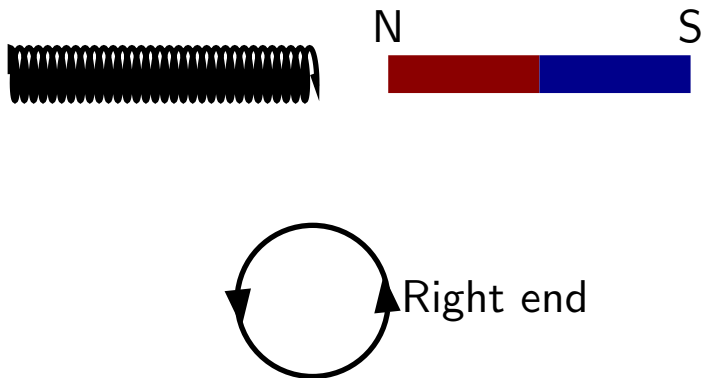


Which of the following is true?

1. The magnetic field inside the inner solenoid is the same as that between the two solenoids and is non-zero.
2. The magnetic field inside both solenoids is zero.
3. The magnetic field inside the inner solenoid is zero and that between the two solenoids is non-zero.
4. The magnetic field inside the inner solenoid is non-zero and that between the two solenoids is zero.

## Question 3

A solenoid carries current and is placed next to a bar magnet. When viewed from its right end, the current circulates as illustrated.



Which of the following is true regarding the force exerted by the solenoid on the magnet?

1. Left
2. Right
3. Up
4. Down
5. No force.