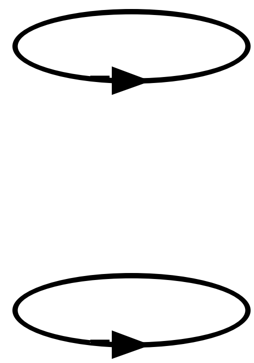
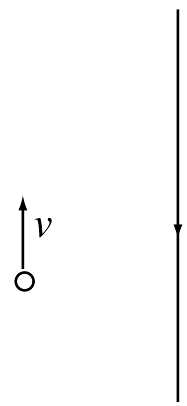
Two identical current loops are placed one above other. If the currents flow in the directions indicated by the arrows, the two loops



1. repel.
2. attract
3. do not interact
4. exert torques on each other
5. push each other sideways

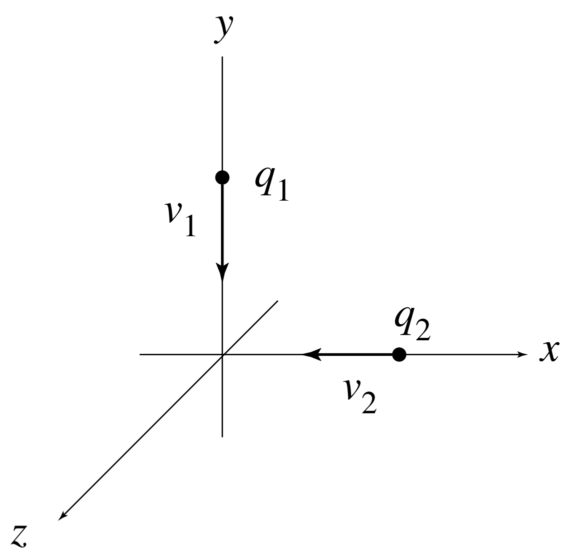
A negatively charged particle moves upward parallel to a wire carrying a downward electric current.



In which direction is the magnetic force on the particle?

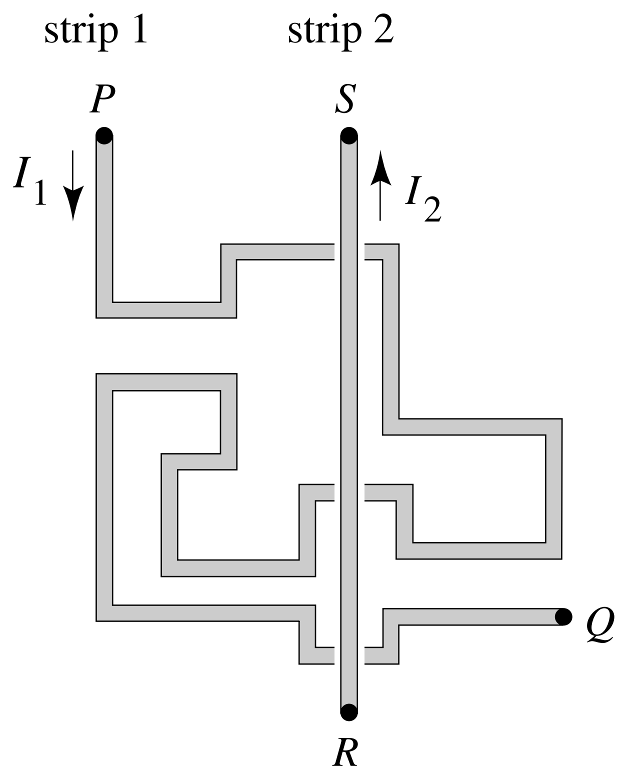
1. up
2. down
3. into the plane of the drawing
4. out of the plane of the drawing
5. left
6. right

Two positive charges move towards the origin as represented below. At the instant shown, in what direction is the magnetic force of q_2 on q_1



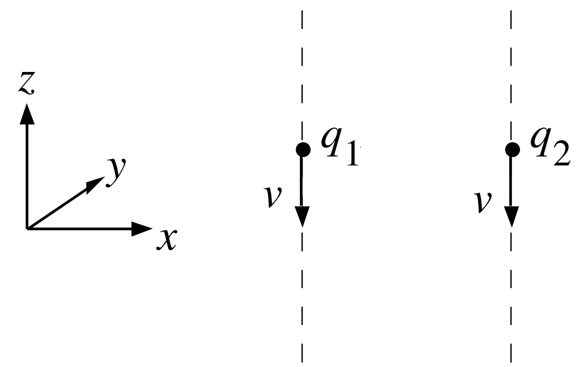
1. the magnetic force is zero
2. $+x$
3. $-x$
4. $+y$
5. $-y$
6. $+z$
7. $-z$
8. other

On a computer chip, two conducting strips carry charge from P to Q and from R to S. If the current direction is reversed in both wires, the net magnetic force of strip 1 on strip 2



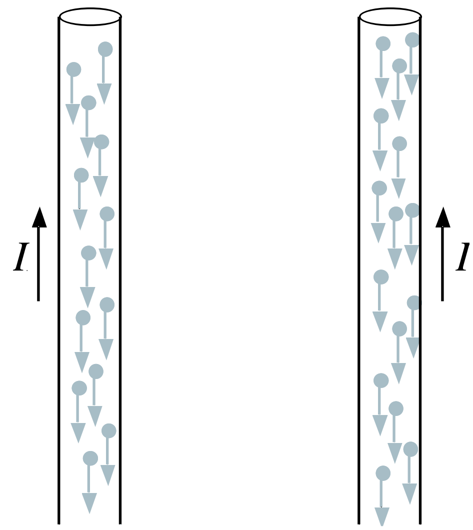
1. remains the same.
2. reverses.
3. changes in magnitude, but not in direction.
4. changes to some other direction.
5. other

Two positive charges move parallel to each other as shown below. At the instant shown, in which direction is the magnetic force of q_2 on q_1?



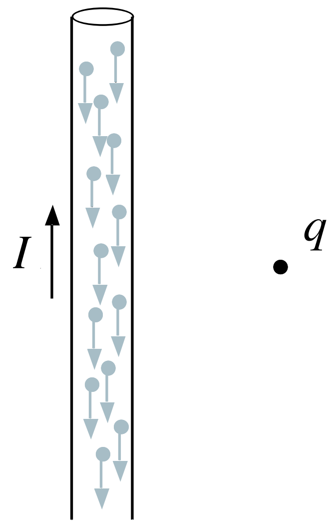
1. The magnetic force is zero (v_1 // v_2)
2. $+x$
3. $-x$
4. $+y$
5. $-y$
6. $+z$
7. $-z$
8. other

Two parallel wires carry identical upward currents, as shown. Does the Coulomb force between the downward moving, negatively charged electrons in each wire cause a repulsive force between the wires?



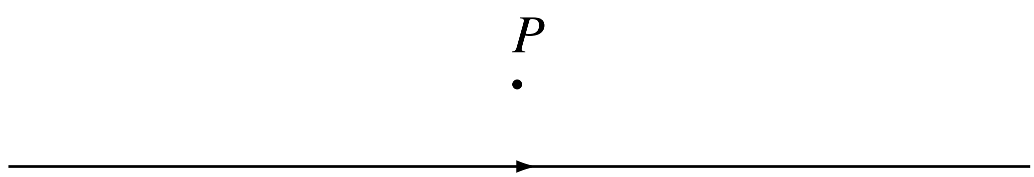
1. Yes, but the magnetic force is stronger
2. Yes, but only if I is sufficiently small
3. No, moving charges don't exert a Coulomb force on each other
4. None of the above

A positively charged particle is placed at rest near a wire carrying a steady upward current. The upward current is due to downward motion of negatively charged electrons in the wire. The wire exerts on the particle



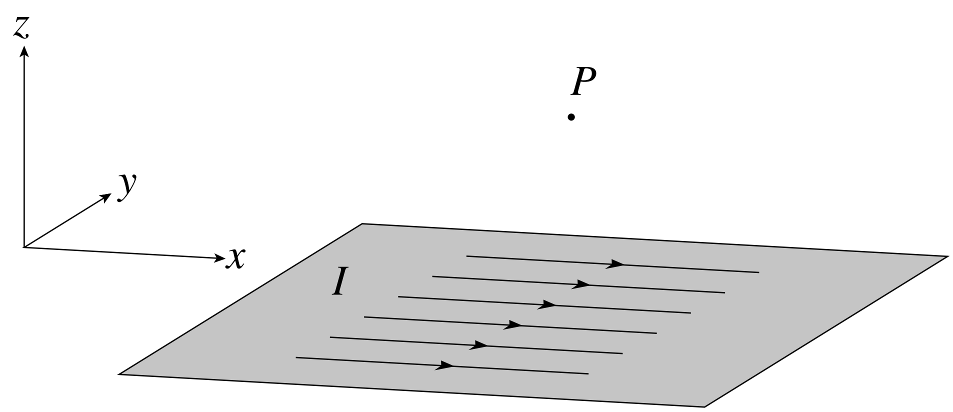
1. An electric force
2. A magnetic force
3. Both an electric and a magnetic force
4. no force

A compass is placed at point P above a wire carrying a current that is directed towards the right. In which direction does the needle of the compass point?



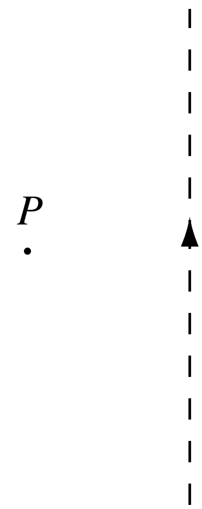
1. up
2. down
3. into the plane of the drawing
4. out of the plane of the drawing
5. left
6. right
7. cannot be determined without knowing if positive or negative charge carries couse a current
8. the compass needle spins wildly

Current flows in the *x*-direction through a very large sheet that lies in the *xy* plane. The magnetic field at the point *P*, some distance above the sheet, is in the



1. +*x* direction
2. -*x* direction
3. +*y* direction
4. -*y* direction
5. +*z* direction
6. -*z* direction
7. it depends also on the *y* and *z* coordiates
8. it's not along any of the axes

A negatively charged particle moves upward along the trajectory shown. As the particle moves by, in which direction does the magnetic field at *P* point?



1. up
2. down
3. into the plane of the drawing
4. out of the plane of the drawing
5. left
6. right