

Physics 112
Quiz #18
November 3, 2000

Name: _____

**IF YOU WANT A QUESTION GRADED OUT OF THREE POINTS (-1 [MINUS ONE] FOR WRONG ANSWER!!)
 WRITE "3" IN SPACE PROVIDED ON EACH QUESTION.**

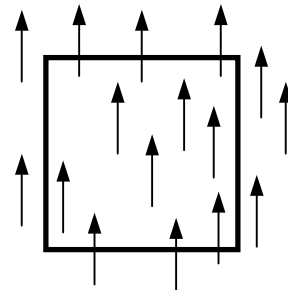
1. A uniform magnetic field points in the negative x direction. A square loop of wire carrying a current is placed at the origin. The plane of the loop is in the yz plane (so the normal to the plane of the loop points in the x direction). Then:
- The loop will not move away from its original location, but it will twist.
 - The loop will **both** move away from its original location, **and** twist
 - The whole loop will move along the x axis.
 - The whole loop will move along the y axis.
 - The loop may or may not move or twist, depending on the direction of current flow in the loop.
 - The loop will not move, nor twist, at all.

Grade out of 3? Write "3" here: _____

2. $B_x = 0$ T; $B_y = 0$ T; $B_z = 10$ T. Square loop of wire carrying current is at origin; corners of square are at (x, y) coordinates (-1 m, -1 m), (1 m, -1 m), (1 m, 1 m), (-1 m, 1 m). Then:
- The loop will not move away from its original location, but it will twist.
 - The loop will **both** move away from its original location, **and** twist
 - The whole loop will move along the x axis.
 - The whole loop will move along the y axis.
 - The loop may or may not move or twist, depending on the direction of current flow in the loop.
 - The loop will not move, nor twist, at all.

Grade out of 3? Write "3" here: _____

3. The diagram shows a current-carrying loop in a uniform magnetic field. Then:
- The loop will not move away from its original location, but it will twist.
 - The loop will **both** move away from its original location, **and** twist
 - The whole loop will move along the x axis.
 - The whole loop will move along the y axis.
 - The loop may or may not move or twist, depending on the direction of current flow in the loop.
 - The loop will not move, nor twist, at all.



Grade out of 3? Write "3" here: _____

4. There is a uniform magnetic field pointing along the y axis, and a moveable current-carrying square loop at the origin. When the loop is in position #1 (see graph):
- The loop will not move away from its original location, but it will twist.
 - The loop will **both** move away from its original location, **and** twist
 - The whole loop will move along the x axis.
 - The whole loop will move along the y axis.
 - The loop may or may not move or twist, depending on the direction of current flow in the loop.
 - The loop will not move, nor twist, at all.

Grade out of 3? Write "3" here: _____

angle between y axis and normal to plane of loop (degrees)

