<u>Quiz 22.1B</u>

The circular wire loop shown below is in the plane of the page, it has 475 turns, a radius of 12.0 cm, and it has a resistance of 0.0541 Ohms. The long straight wire next to the loop initially has a current of 5.00 Amps pointed toward the left side of the page. The center of the circular loop is located 71.0 cm away from the straight wire.

The current in the wire switches to be 5.00 Amps in the opposite direction over a time interval of 8.33 milliseconds.

For simplicity, assume for this problem that the external magnetic field in which the circular wire loop is uniform and has a value equal to whatever the magnetic field is at the geometric center of the loop, 71.0 cm away from the long straight wire.

What is the magnitude and direction of the induced current in the circular wire loop during this 8.33 millisecond time interval?

