Consider the circuit shown in the Figure. A 100 Volt battery is connected through a 2 Ω resistor. The wire connecting them passes through a region of homogeneous magnetic field of magnitude $B = 2$ Tesla. The wire passes a distance $a = 3$ cm into the field, and then bends and goes a distance $b = 4$ cm before leaving the field.

Calculate the magnitude of the net force on the wire.

Warning! Warning! Warning! Force is a vector. I want the magnitude of this vector.

Multiple choice:

(a) $F = 0$
(b) $F = 1$ N
(c) $F = \sqrt{3}$ N
(d) $F = 3$ N
(e) $F = 4$ N
(f) $F = 5$ N
(g) $F = 7$ N
(h) $F = \sqrt{10}$ N
(i) $F = 10$ N
(j) $F = 100$ N
(k) None of the above

Answer: ________________________________