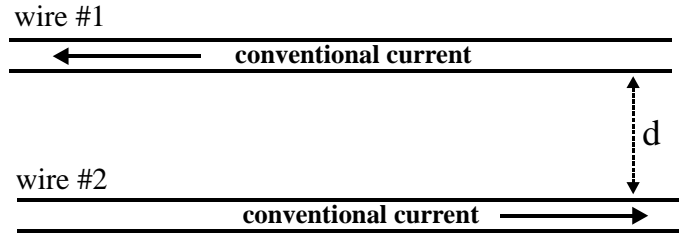


## Quiz 11:5D Magnetic Fields & Current

Two parallel, current carrying wires are carrying current in opposite directions as shown to the right. The current in wire #1 is  $I_1 = 7.20$  amperes, the current in wire #2 is  $I_2 = 5.40$  amperes and the two wires are  $d = 2.50\text{cm}$  apart.



$[\mu_0 = 4\pi \times 10^{-7} \text{T}\cdot\text{m}/\text{amp}]$

1. What will be the direction of the magnetic field at the location of **wire #2** caused by **wire #1**? [3 pts]

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2. What will be the direction of the magnetic field at the location of **wire #1** caused by **wire #2**? [3 pts]

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3. What will be the direction of the magnetic force acting on **wire #2** as caused by **wire #1**? [3 pts]

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4. What will be the magnitude of the magnetic force between  $L = 1.00$  meters of these two wires? [3 pts]

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5. What would happen to the force between these two wires if the current in wire #2 is reversed? [3 pts]

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