

## ECE110 - Quiz #3

Only non-programmable calculators are allowed.

Duration: 30 Minutes

First Name: \_\_\_\_\_ Last Name: \_\_\_\_\_

Student #: \_\_\_\_\_ Tutorial Section: \_\_\_\_\_

Two infinitely long straight and thin wires carrying currents  $i_1 = 5\text{A}$  and  $i_2 = 2\text{A}$  are positioned in parallel to the y-axis at  $x = 2\text{cm}$  and  $x = 5\text{cm}$  respectively as shown in the Figure below. A positive charge  $q$  travels in the opposite direction of y-axis at a distance  $x = 3\text{cm}$  in a uniform  $\vec{E} = 6 \hat{i} \text{ V/m}$ .

Determine:

- a) Direction and Magnitude of the magnetic field along the path of charge  $q$ . [2.5 Marks]
- b) Magnitude of the velocity. [2.5 Marks]

