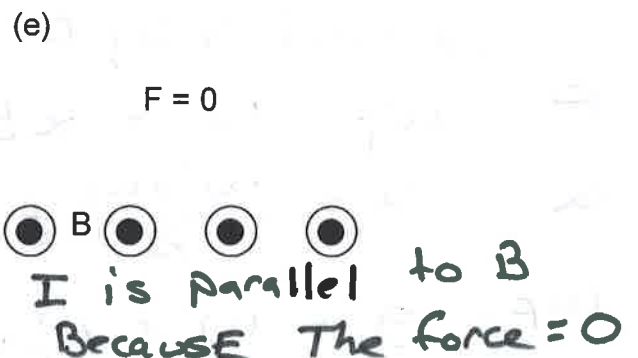
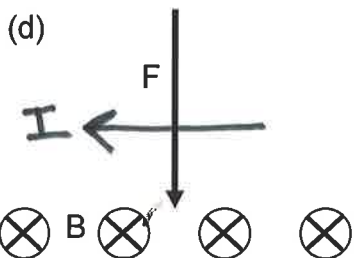
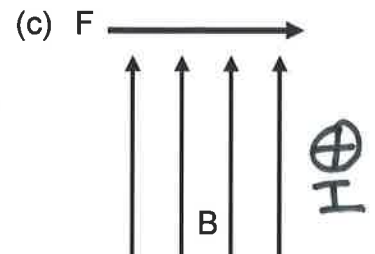
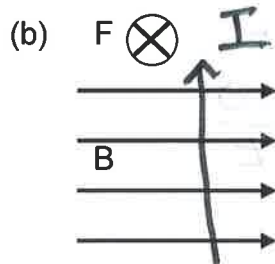
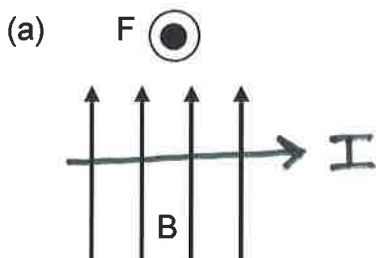


Magnetic Force on a Current Carrying Wire:

Force Direction on a Wire - Use RHR, positive charge moving + to - :

1. Use the right hand rule to find the direction of the current in a wire based on the force and field.



Magnetic Force on a wire:

From our experience in the lab, we also know that a wire with a current in it also contains moving charges and will experience a force on it if it is placed in a magnetic field. Starting with the equation for a moving charge, derive an equation for the force on a current carrying wire.

$$F = BIL$$

$B =$ Magnetic field strength in Teslas (T)

$I =$ Current in the wire (A)

$L =$ Length of the wire (L)

3. A 1.0 meter long wire with a 6.0 amp current to the left enters a magnetic field of 0.35 T directed toward the top of the page. What is the magnitude and direction of the force on the wire?

$$F = BIL$$

$$F = 0.35(6)(1)$$

$$F = 2.1 \text{ N}$$

Draw a diagram of the force, field, and velocity

