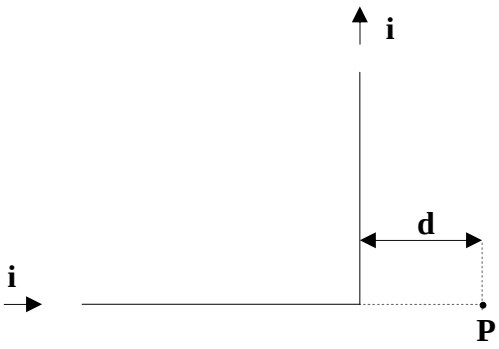
QUIZ #6 **25 points, 18 minutes** SCORE_____

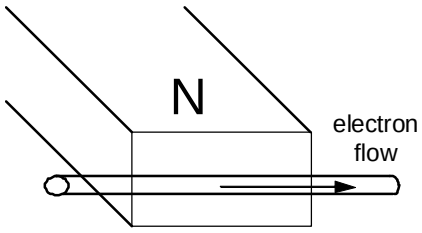
(1) The figure shows a current, i, flowing through two half-infinite wires. Use the law of Biot and Savart to find the magnetic field, **B**, at the point P indicated in the figure.

- You may leave your answer in the form of an integral, so long as it is simplified as much as possible.
- If you introduce a coordinate system, it must be clearly indicated.

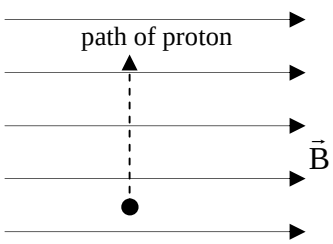


(2) Provide the specified direction.

(a) The figure shows the motion of *electrons* in a wire which is near the North pole of a magnet. Direction of the force on the wire?



(b) A proton travels at constant velocity in a region containing uniform magnetic and electric fields. Direction of the electric field?



(c) The instantaneous velocity of a proton traveling in a magnetic field is given in the figure. Will the proton circle clockwise or counterclockwise?