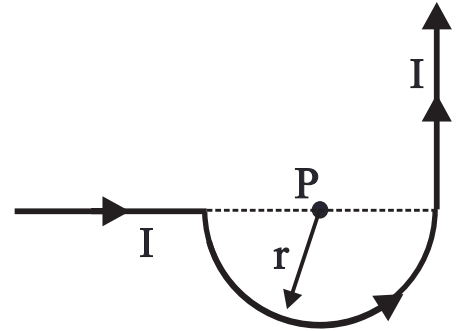


NAME _____
PERIOD _____

QUIZ #46 D
MAGNETIC FIELDS

A current of $I = 6.20$ Amperes is flowing through a wire bent into the shape as shown to the right. The shape consists of exactly $\frac{1}{2}$ of a circle with a radius of $r = 3.50$ cm connected at each end to two long, straight wires.

1. What will be the **direction** of the magnetic field at point P at the center of the circle? [3 pts]
2. What will be the **magnitude** of the magnetic field strength at point P as caused by the straight segments of the wire? [3 pts]
3. What will be the **magnitude** of the magnetic field strength at point P as caused by the circular portion of the wire? [3 pts]



$$\mu_0 = 4\pi \times 10^{-7} \text{ N/A}^2$$
$$k_m = \mu_0/4\pi = 10^{-7} \text{ N/A}^2$$

A current of $I = 5.50$ Amperes, is flowing through a wire directed out of the paper as shown to the right. The wire has a radius of $r = 1.80$ cm

4. What will be the **directions** of the magnetic field at points P_1 and P_2 ? [3 pts]
5. What will be the **magnitude** of the magnetic field at point, P_1 , which is located a distance of $r_2 = 0.70$ cm from the center of the wire. [3 pts]

