Problem 5.12 Two infinitely long, parallel wires are carrying 6-A currents in opposite directions. Determine the magnetic flux density at point $P$ in Fig. P5.12.

Solution:

$$B = \hat{\phi} \frac{\mu_0 I_1}{2\pi (0.5)} + \hat{\phi} \frac{\mu_0 I_2}{2\pi (1.5)} = \hat{\phi} \frac{\mu_0}{\pi} (6 + 2) = \hat{\phi} \frac{8\mu_0}{\pi} \quad \text{(T).}$$