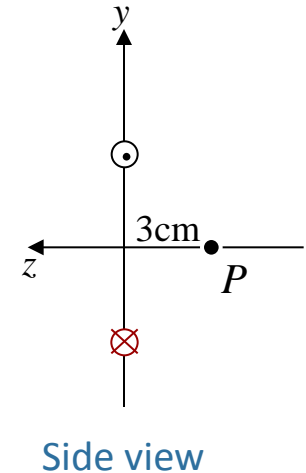
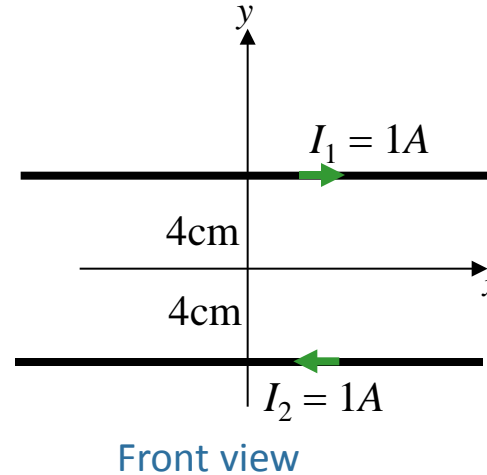


# Calculation

Two parallel horizontal wires are located in the vertical  $(x,y)$  plane as shown. Each wire carries a current of  $I = 1A$  flowing in the directions shown.

What is the  $B$  field at point  $P$ ?



## Conceptual Analysis

Each wire creates a magnetic field at  $P$

$$B \text{ from infinite wire: } B = \mu_0 I / 2\pi r$$

Total magnetic field at  $P$  obtained from superposition

## Strategic Analysis

Calculate  $B$  at  $P$  from each wire separately

Total  $B$  = vector sum of individual  $B$  fields