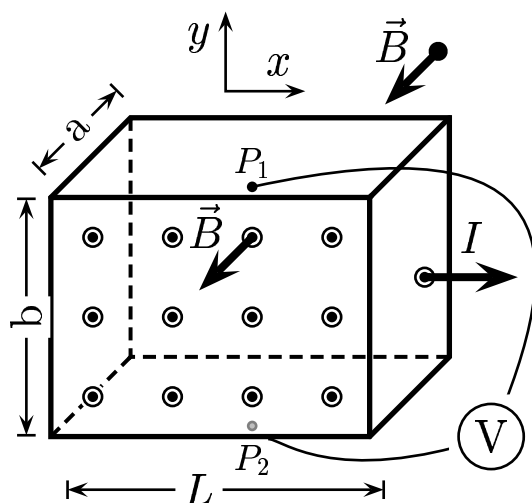
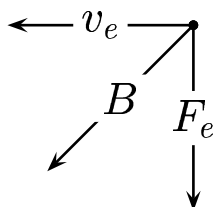


Given: A rectangular metal strip has current I flowing to the right. Average drift velocity of the electrons is to the left. B is out of the page.



Using the voltmeter shown in the figure, determine the relationship of the electric potential at P_1 and P_2 .

- A) $V_{P_1} > V_{P_2}$
- B) $V_{P_1} \approx V_{P_2}$
- C) $V_{P_1} < V_{P_2}$
- D) Cannot be determined.



Using the right hand rule and $\vec{F} = \vec{v} \times \vec{B}$ where \vec{v} is along the negative x axis and \vec{B} is along the positive z axis, the resulting \vec{F} is along along the negative y axis

$$-\hat{i} \times \hat{k} = \hat{j},$$

since q is negative, the answer is $-\hat{j}$, or along the negative y axis. The bottom of the strip is negative and the top of the plate is positive, $V_{P_1} > V_{P_2}$.

Answer **A**.