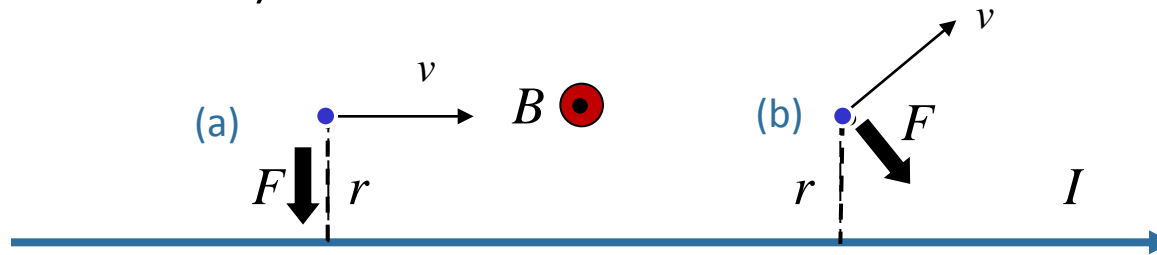


Currents + Charges



A long straight wire is carrying current from left to right. Two identical charges are moving with equal speed. Compare the magnitude of the force on charge a moving directly to the right, to the magnitude of the force on charge b moving up and to the right at the instant shown (i.e. same distance from the wire).



A) $|F_a| > |F_b|$

B) $|F_a| = |F_b|$

C) $|F_a| < |F_b|$

$$\vec{F} = q\vec{v} \times \vec{B}$$

$$|\vec{F}| = qvB \sin \theta$$

Same q , $|v|$, B and $\theta (=90)$

Forces are in different directions