

Ex 19.2 p. 593

$$p^+ v = 8 \times 10^6 \frac{\text{m}}{\text{s}} \quad x\text{-axis}$$

$$B = 2.5 \text{ T} \quad \theta = 60^\circ$$

$$F = ? \quad a = ?$$

$$F = qvB \sin \theta$$
$$F = 1.6 \times 10^{-19} (8 \times 10^6) 2.5 \sin 60$$

$$F_B = 2.8 \times 10^{-12} \text{ N}$$

$$F = ma$$

$$2.8 \times 10^{-12} = 1.67 \times 10^{-27} a$$

$$1.7 \times 10^{15} \frac{\text{m}}{\text{s}^2} = a$$

θ between
 v & B

if $\theta = 90^\circ$ F_{max} $v \perp B$
 $< 90^\circ$ $F \downarrow$
 $\theta = 0^\circ$ $F = 0$ $v \parallel B$

$$F = qvB \sin \theta$$

$F = ma$
Newton's 2nd