

) Show that  $(\vec{a} - \vec{b}) \times (\vec{a} + \vec{b}) = 2(\vec{a} \times \vec{b})$

Consider LHS  $(\vec{a} - \vec{b}) \times (\vec{a} + \vec{b})$

$$= \vec{a} \times \vec{a} + \vec{a} \times \vec{b} - \vec{b} \times \vec{a} - \vec{b} \times \vec{b}$$

$$= \vec{o} + (\vec{a} \times \vec{b}) + (\vec{a} \times \vec{b}) - \vec{o}$$

$$\therefore (\vec{a} - \vec{b}) \times (\vec{a} + \vec{b}) = 2(\vec{a} \times \vec{b})$$