

HW5

① If $|\vec{u}| = 4$, $\angle(\vec{u}, \vec{v}) = \pi/5$,
and $|\vec{u} \times \vec{v}| = 8$, then $|\vec{v}| = ?$

② Find some unit vectors $\vec{u}, \vec{v}, \vec{w}$
such that $(\vec{u} \times \vec{v}) \times \vec{w} \neq \vec{u} \times (\vec{v} \times \vec{w})$.

③ $(\vec{i} + 2\vec{j}) \times (\vec{k} - 3\vec{i}) = ?$

④ If $|\vec{u}| = 5$, then what is
 $((\vec{u} + (\vec{u} \times \vec{v})) \cdot \vec{u}) - (3\vec{v} \cdot (\vec{u} \times \vec{v}))$?

⑤ Find a unit vector perpendicular
to both $\langle 1, 2, 0 \rangle$ and $\langle 0, 5, -1 \rangle$.