

DISCUSSION WORKSHEET, AUG 28

0.1. **Computing a Cross Product.** Find a vector which is mutually orthogonal to $\langle 1, 0, 1 \rangle$ and $\langle 0, 1, 2 \rangle$.

0.2. **Volume of a parallelepiped.** Find the volume of the parallelepiped whose edges are given by the vectors $\langle 0, 1, 2 \rangle$ and $\langle -1, 1, 1 \rangle, \langle 1, 0, 1 \rangle$

0.3. **Triple Products.** Show (by computation) that

$$\vec{u} \cdot (\vec{v} \times \vec{w}) = \vec{v} \cdot (\vec{w} \times \vec{u}),$$

and explain why this geometrically makes sense.

0.4. **Concept Check.** Why is $|\vec{u} \cdot (\vec{v} \times \vec{w})| \leq |\vec{u}||\vec{v}||\vec{w}|$?