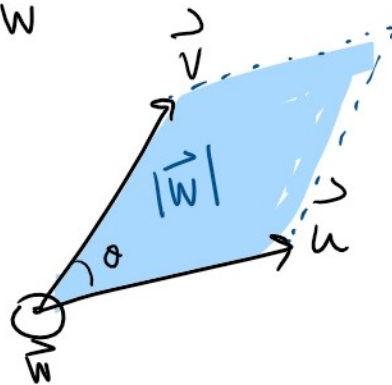


# ★ Review of Vectors

Def: The cross product  $\vec{u} \times \vec{v} = \vec{w}$

is the vector orthogonal  
both  $\vec{u}$  and  $\vec{v}$

Right Hand Rule determines  
direction



$|\vec{w}|$  is the area of the parallelogram

$$\vec{w} = \vec{u} \times \vec{v} = \begin{vmatrix} \hat{i} & \hat{j} & \hat{k} \\ u_1 & u_2 & u_3 \\ v_1 & v_2 & v_3 \end{vmatrix}$$

$$|\vec{w}| = |\vec{u} \times \vec{v}| = |\vec{u}| |\vec{v}| \sin \theta$$