Solution (#888) Consider the parallelogram with vertices $\mathbf{0}$, $\mathbf{u}$, $\mathbf{v}$, $\mathbf{u}+\mathbf{v}$.

Recall that the area of a parallelogram equals the product of its base and height. We might take the edge from $\mathbf{0}$ to $\mathbf{u}$, which has length $|\mathbf{u}|$, as the base of the parallelogram. The parallelogram's height would then be $|\mathbf{v}|\sin\theta$ where θ is the angle between the base and the edge from $\mathbf{0}$ to $\mathbf{v}$.

Hence the area of the given parallelogram equals

$$\begin{aligned} \text{base} \times \text{height} &= |\mathbf{u}| \times |\mathbf{v}| \sin\theta \\ &= |\mathbf{u}|\,|\mathbf{v}| \sin\theta \\ &= |\mathbf{u} \wedge \mathbf{v}| \,. \end{aligned}$$