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0.1 The cross product

$$v \times u$$

0.1.1 Cross product is a bilinear map

This is a bilinear map from two vectors in \mathbb{R}^3 to another vector in the same space.

$$V \times V \rightarrow V$$

0.1.2 Calculating the cross product

This is calculated by:

$$u \times v = ||u|| ||v|| \sin(\theta) n$$

The resulting vector is perpendicular to both input vectors.