Vectors Review

0.1 Cosine Rule:

$$c^2 = a^2 + b^a - 2ab\cos\theta$$

0.2 Angle between vectors:

$$\vec{u} \cdot \vec{v} = \mid \vec{u} \mid * \mid \vec{v} \mid * \cos\theta$$

0.3 Project $\vec{u}$ onto $\vec{v}$:

$$\frac{\vec{u} \cdot \vec{v}}{\mid \vec{v} \mid^2} \vec{v}$$

0.4 Cross Product in 3 Dimensions:

$$\vec{u} \cdot \vec{v} = \text{determinant of } \begin{bmatrix} \vec{i} & \vec{j} & \vec{k} \\ u_1 & u_2 & u_3 \\ v_1 & v_2 & v_3 \end{bmatrix}$$