PHYS 117 MT2 Formula Sheet
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1 Kinematics

1.1 Scalar Product

$$\vec{A} \cdot \vec{B} = AB\cos\theta$$
$$\vec{A} \cdot \vec{B} = A_x B_x + A_y B_y + A_z B_z$$

1.2 Cross Product

$$\vec{A} \times \vec{B} = -\vec{B} \times \vec{A} = AB\sin\theta$$
$$\vec{A} \times \vec{B} = (A_y B_z - A_z B_y)\,\hat{i} + (A_z B_x - A_x B_z)\,\hat{j} + (A_x B_y - A_y B_x)\,\hat{k}$$

Use right hand rule (point fingers along the first vector, curl hand in towards next vector).