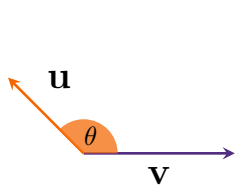
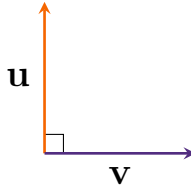


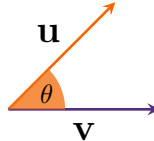
$$\theta = \pi, \mathbf{u} \cdot \mathbf{v} = -|\mathbf{u}||\mathbf{v}|$$



$$\mathbf{u} \cdot \mathbf{v} = |\mathbf{u}||\mathbf{v}| \cos \theta < 0$$



$$\theta = \frac{\pi}{2}, \mathbf{u} \cdot \mathbf{v} = 0$$



$$\mathbf{u} \cdot \mathbf{v} = |\mathbf{u}||\mathbf{v}| \cos \theta > 0$$



$$\theta = 0, \mathbf{u} \cdot \mathbf{v} = |\mathbf{u}||\mathbf{v}|$$