1. Show that if $\vec{u}+\vec{v}$ and $\vec{u}-\vec{v}$ are orthogonal, then $|\vec{u}|=|\vec{v}|$
2. Find an unit vector that makes an angle of $\frac{\pi}{3}$ with $\vec{v}=<1,\sqrt{3},-2\sqrt{3}>$ and perpendicular to $\vec{k}=<0,0,1>$.
3. $\vec{u}\cdot\vec{v}=\sqrt{3}$ and $\vec{u}\times\vec{v}=<1,2,2>$. Compute the angle between $\vec{u}$ and $\vec{v}$.
4. Find the distance from $(1,2,4)$ to the plane $3x+2y+z-5=0$
5. Find an equation of the plane passing through $(0,2,4)$, $(1,-3,2)$ and $(-3,-2,1)$