

$$\vec{V} = a\vec{i} + b\vec{j} + c\vec{k}$$

$$\|\vec{V}\| = \sqrt{a^2 + b^2 + c^2}$$

THEN

$$1. \cos \alpha = \frac{a}{\|\vec{V}\|}$$

$$2. \cos \beta = \frac{b}{\|\vec{V}\|}$$

$$3. \cos \gamma = \frac{c}{\|\vec{V}\|}$$

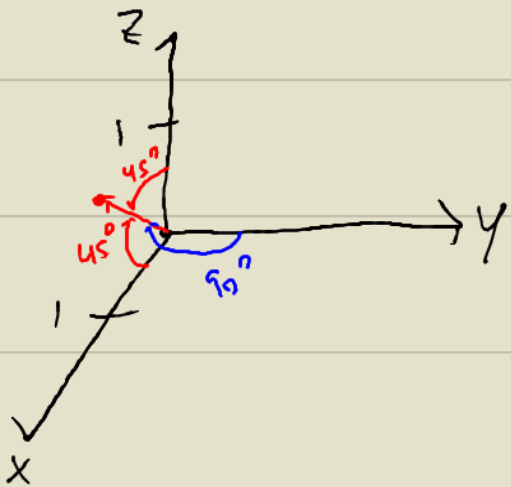
$$13. \vec{V} = \vec{i} + \vec{k}$$

$$a=1 \quad b=0 \quad c=1$$

$$\|\vec{V}\| = \sqrt{a^2 + b^2 + c^2}$$

$$= \sqrt{1^2 + 0^2 + 1^2}$$

$$= \sqrt{2}$$



$$\alpha = \cos^{-1} \left(\frac{a}{\|\vec{V}\|} \right)$$

$$\alpha = \cos^{-1} \left(\frac{1}{\sqrt{2}} \right) = 45^\circ$$

$$\beta = \cos^{-1} \left(\frac{b}{\|\vec{V}\|} \right)$$

$$\beta = \cos^{-1} \left(\frac{0}{\sqrt{2}} \right) = 90^\circ$$

$$\gamma = \cos^{-1} \left(\frac{c}{\|\vec{V}\|} \right)$$

$$= \cos^{-1} \left(\frac{1}{\sqrt{2}} \right) = 45^\circ$$