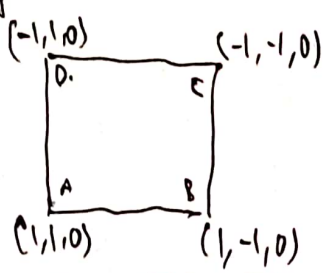
Latsol TVM

1. Alas



$\|\bar{AB}\| = \|\bar{BC}\| = \|\bar{CD}\| = \|\bar{DA}\|$

$\|\bar{AB}\| = \sqrt{(1-1)^2+(1+1)^2}$

$= \sqrt{2^2} = 2$

P = puncak, P(0,0,1)

$\|\bar{AP}\| = \sqrt{(1-0)^2+(1-0)^2+(0-1)^2}$

$= \sqrt{3}$

Karena $\|\bar{AP}\| = \|\bar{BP}\| = \|\bar{CP}\| = \|\bar{DP}\|$

sehingga setiap sisi yg menghubungkan alas dg puncak memiliki panjang $\sqrt{3}$ satuan.

2. $U = \begin{bmatrix} 2 \\ 2 \end{bmatrix}$, $V = \begin{bmatrix} 2 \\ -2 \end{bmatrix}$, $W = \begin{bmatrix} -2 \\ -6 \end{bmatrix}$

1.a). $\|\bar{U}\| = \sqrt{2^2+2^2} = 2\sqrt{2}$

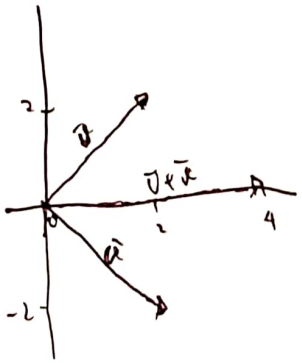
b). $\|\bar{V}-\bar{W}\| = \sqrt{(2+2)^2+(-2+6)^2}$

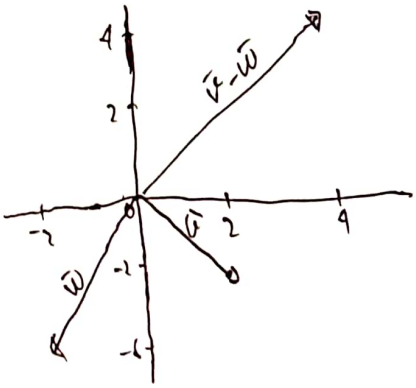
$= 4\sqrt{2}$

2 a. $U+V = \begin{bmatrix} 2 \\ 2 \end{bmatrix} + \begin{bmatrix} 2 \\ -2 \end{bmatrix} = \begin{bmatrix} 4 \\ 0 \end{bmatrix}$

b. $V-W = \begin{bmatrix} 2 \\ -2 \end{bmatrix} - \begin{bmatrix} -2 \\ -6 \end{bmatrix}$

$= \begin{bmatrix} 4 \\ 4 \end{bmatrix}$





3. Sudut antara $U-V \Rightarrow \theta = \cos^{-1}\left(\frac{U \cdot V}{\|U\| \cdot \|V\|}\right)$

$= \cos^{-1}\left(\frac{4}{2\sqrt{2} \cdot 4\sqrt{2}}\right)$

$\theta = \tan^{-1}(\quad)$

$\theta = 90°$

3. Sudut antara $(u-v)$ dan $(w+v)$?

$\bar{a} = \bar{u} - \bar{v} = \begin{bmatrix} 4 \\ 0 \end{bmatrix}$

$\bar{b} = \bar{w} + \bar{v} = \begin{bmatrix} 0 \\ -4 \end{bmatrix}$

$\theta = \cos^{-1} \frac{\bar{a} \cdot \bar{b}}{\|\bar{a}\| \|\bar{b}\|}$

$= \cos^{-1} \frac{0+0}{\|\bar{a}\| \cdot \|\bar{b}\|}$

$\theta = \cos^{-1} 0$

$\theta = 90^\circ$