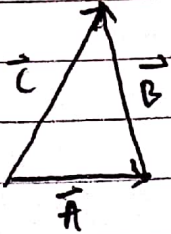


Soal 1.



$$\vec{A} = \hat{i} + 2\hat{j} + 0\hat{k}$$

$$\vec{B} = -\hat{i} - 2\hat{j} + 3\hat{k}$$

$$\vec{A} + \vec{B} = \vec{C}$$

Hitung Vektor C
Hitung Sudut $\vec{A}\vec{B}$

$$\vec{A} + \vec{B} = \vec{C}$$

$$= (\hat{i} + 2\hat{j} + 0\hat{k}) + (-\hat{i} - 2\hat{j} + 3\hat{k})$$

$$= 0\hat{i} + 0\hat{j} + 3\hat{k} = 3$$

~~Hitung Vektor C = $\vec{A} + \vec{B} = \vec{C}$~~

~~$$\vec{A} + \vec{B} = (\hat{i} + 2\hat{j} + 0\hat{k}) + (-\hat{i} - 2\hat{j} + 3\hat{k})$$~~

~~$$\vec{C} = 0\hat{i} + 0\hat{j} + 3\hat{k} = 3$$~~

$$\vec{A} \cdot \vec{B} = |\vec{A}| \cdot |\vec{B}| \cos \theta$$

$$= (\hat{i} + 2\hat{j} + 0\hat{k}) \cdot (-\hat{i} - 2\hat{j} + 3\hat{k}) \cos \theta$$

$$= -1 - 4 = -5$$

$$-5 = \sqrt{4} \cdot \sqrt{3} \cos \theta$$

$$\theta = \arccos \frac{-5}{\sqrt{4} \cdot \sqrt{3}}$$

Sol 2

$$\vec{A} = 2x\hat{i} + 3x^2\hat{j} + 4xy\hat{k}$$

$$\vec{B} = xy\hat{j} + 2x\hat{j} + 3x\hat{k}$$

$\vec{A} \times \vec{B} =$	$\hat{i}$	$\hat{j}$	$\hat{k}$
	$2x$	$3x^2$	xy
	xy	$2x$	$3x$

$$= \hat{i} (9x^3 - 8x^2y) - \hat{j} (6x^2 - 4x^2y^2) - \hat{k} (4x^2y - 3x^3y)$$

$$a) V_1 = x^2 \hat{i} + 3xz \hat{j} - 2xz \hat{k}$$

$$b) V_2 = xy \hat{i} + 2yz \hat{j} + 3xz \hat{k}$$

$$c) V_3 = y^2 \hat{i} + (2xy + z^2) \hat{j} - 2yz \hat{k}$$

Jawab

$$a). \nabla \cdot V_1 = 2x + 0 - 2x$$

$$b). \nabla \cdot V_2 = y + x + 3x$$

$$c). \nabla \cdot V_3 = 0 + 2x + 2y$$