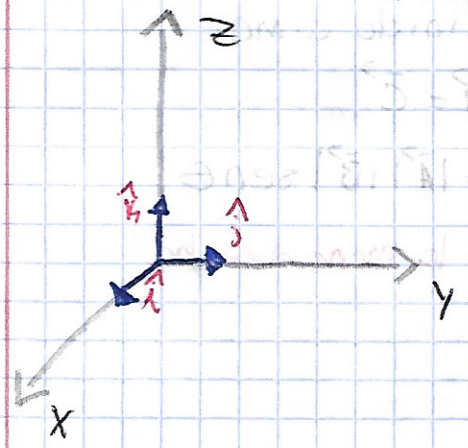
Tarea 1: Determinar los siguientes productos escalares



$\hat{j}\cdot\hat{i} = \hat{j}\cdot\hat{i}\cos 90 = 0$

$\hat{j}\cdot\hat{k} = \hat{j}\cdot\hat{k}\cos 90 = 0$

$\hat{i}\cdot\hat{k} = \hat{i}\cdot\hat{k}\cos 90 = 0$

$\hat{k}\cdot\hat{j} = \hat{k}\cdot\hat{j}\cos 90 = 0$

$\hat{k}\cdot\hat{i} = \hat{k}\cdot\hat{i}\cos 90 = 0$

$\hat{i}\cdot\hat{i} = \hat{i}\cdot\hat{i}\cos 0 = 1$

$\hat{j}\cdot\hat{j} = \hat{j}\cdot\hat{j}\cos 0 = 1$

$\hat{k}\cdot\hat{k} = \hat{k}\cdot\hat{k}\cos 0 = 1$

Tarea 2: Verificar que son iguales

a)
$$\begin{vmatrix} \hat{i} & \hat{j} & \hat{k} \\ a_x & a_y & a_z \\ b_x & b_y & b_z \end{vmatrix} = \begin{matrix} \hat{i}(a_y b_z - a_z b_y) \\ -\hat{j}(a_x b_z - a_z b_x) \\ \hat{k}(a_x b_y - a_y b_x) \end{matrix}$$

b)
$$\begin{vmatrix} \hat{i} & \hat{j} & \hat{k} \\ a_x & a_y & a_z \\ b_x & b_y & b_z \end{vmatrix} = a_y b_z \hat{i} + a_x b_y \hat{k} + b_x a_z \hat{j} - a_y b_x \hat{k} - a_z b_y \hat{i} - b_z a_x \hat{j}$$

$a_y b_z \hat{i} - a_z b_y \hat{i} \quad \hat{i}(a_y b_z - a_z b_y)$

$a_z b_x \hat{j} - a_x b_z \hat{j} = -\hat{j}(a_x b_z - a_z b_x)$

$a_x b_y \hat{k} - a_y b_x \hat{k} \quad \hat{k}(a_x b_y - a_y b_x)$