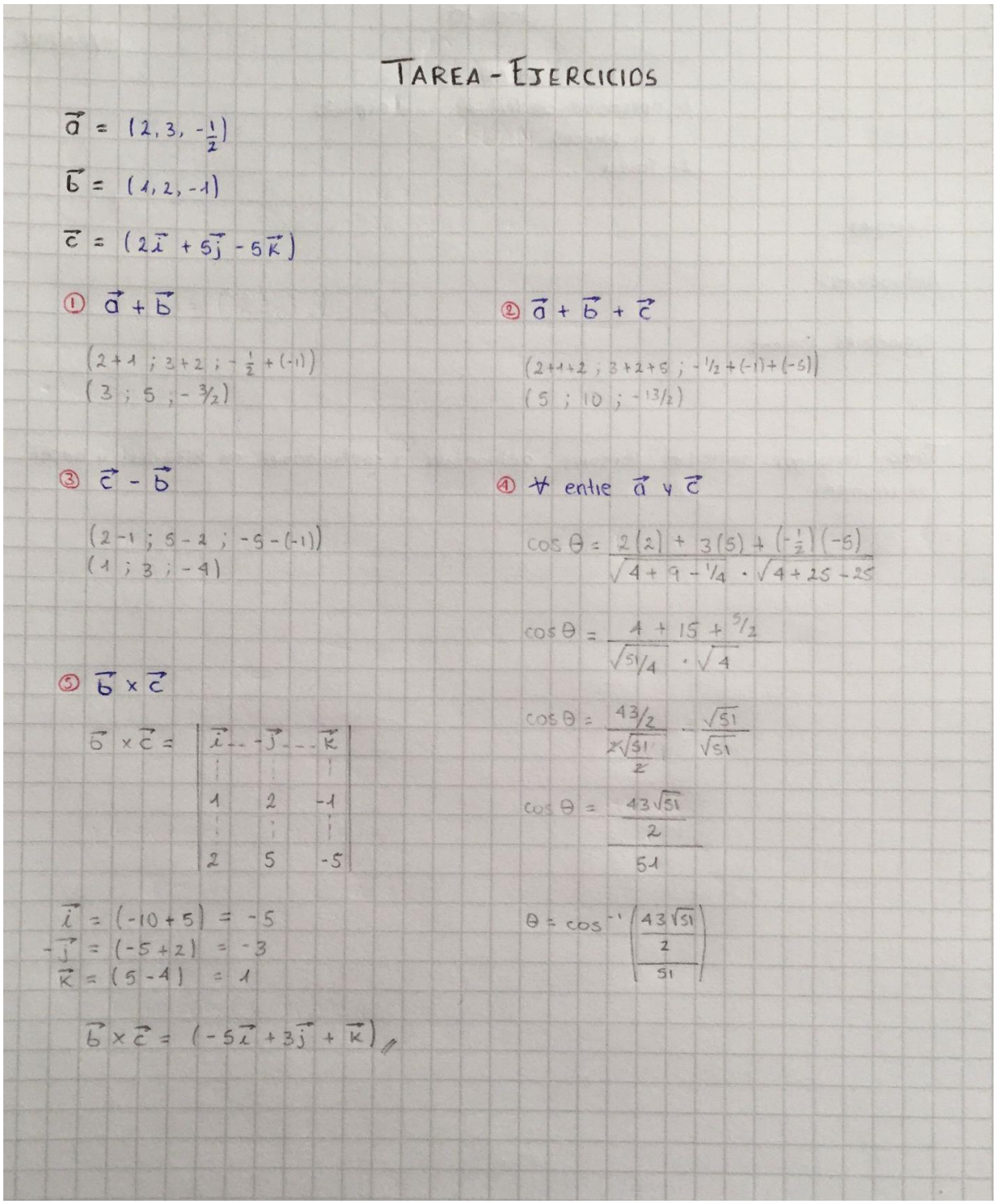
UNIVERSIDAD POLITÉCNICA SALESIANA

DISEÑO MULTIMEDIA

- TAREA



TAREA - EJERCICIOS

$\vec{a} = (2, 3, -\frac{1}{2})$

$\vec{b} = (1, 2, -1)$

$\vec{c} = (2\vec{i} + 5\vec{j} - 5\vec{k})$

① $\vec{a} + \vec{b}$

$(2+1 ; 3+2 ; -\frac{1}{2} + (-1))$

$(3 ; 5 ; -3/2)$

② $\vec{a} + \vec{b} + \vec{c}$

$(2+1+2 ; 3+2+5 ; -1/2 + (-1) + (-5))$

$(5 ; 10 ; -13/2)$

③ $\vec{c} - \vec{b}$

$(2-1 ; 5-2 ; -5-(-1))$

$(1 ; 3 ; -4)$

④ $\measuredangle$ entre $\vec{a}$ y $\vec{c}$

$$\cos\theta = \frac{2(2) + 3(5) + (-\frac{1}{2})(-5)}{\sqrt{4+9-1/4} \cdot \sqrt{4+25+25}}$$

$$\cos\theta = \frac{4 + 15 + 5/2}{\sqrt{51/4} \cdot \sqrt{4}}$$

$$\cos\theta = \frac{43/2}{2\sqrt{51}/2} \cdot \frac{\sqrt{51}}{\sqrt{51}}$$

$$\cos\theta = \frac{\frac{43\sqrt{51}}{2}}{51}$$

$$\theta = \cos^{-1}\left(\frac{\frac{43\sqrt{51}}{2}}{51}\right)$$

⑤ $\vec{b} \times \vec{c}$

$$\vec{b} \times \vec{c} = \begin{vmatrix} \vec{i} & -\vec{j} & \vec{k} \\ 1 & 2 & -1 \\ 2 & 5 & -5 \end{vmatrix}$$

$\vec{i} = (-10 + 5) = -5$

$-\vec{j} = (-5 + 2) = -3$

$\vec{k} = (5 - 4) = 1$

$\vec{b} \times \vec{c} = (-5\vec{i} + 3\vec{j} + \vec{k})$