

Universidad Mariano Gálvez de Guatemala
Boca del Monte

Ingeniería en Sistemas. Ciclo II, "c"
Jornada Sábado.

ALGEBRA LÍNEAL

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I

$$(A \times B) \times C =$$

$$A \times B = (3)(2)(-1)(1)(2)(-1) = 6, -1, -2$$

$$A \times B \times C = (6)(1)(-1)(-2)(-2)(+2) = 6, -1, -4$$

$$A \times (B \times C) =$$

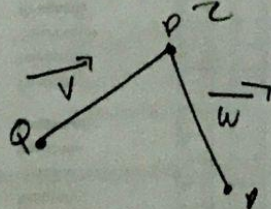
$$B \times C = (2)(1)(1)(-2)(-1)(2) = -2, -2, -2$$

$$A \times B \times C = (3)(2)(-1)(-2)(2)(-2) = 6, -2, -4$$

II

$$\vec{v} \times \vec{w} = \begin{bmatrix} i & j & k \\ 1 & -9 & -1 \\ -2 & -1 & 1 \end{bmatrix} = \begin{bmatrix} 1 \\ -4 \\ 1 \end{bmatrix} \times \begin{bmatrix} -2 \\ -1 \\ 1 \end{bmatrix} = \begin{bmatrix} -4+9 \\ 1-2 \\ -1+2 \end{bmatrix} = \begin{bmatrix} 5 \\ -1 \\ 1 \end{bmatrix}$$

$$\sqrt{\frac{-33+1^2+1^2}{1^2}} = \sqrt{\frac{a+1+4a}{1}} = \sqrt{\frac{5a}{1}} = 5.938$$



III

$$V = |\vec{v} \cdot (\vec{v} \times \vec{w})| = \left| \begin{vmatrix} 1 & 7 \\ 3 & 2 \\ -7 & 3 \end{vmatrix} \right| = 2+9-7+2 - (-3-4+3-3)$$

$$V = 1-4 = -3$$

$$V = 4$$

$$= \begin{vmatrix} 1 & 7 \\ 3 & 2 \\ -7 & 3 \end{vmatrix} = 2+9-7+2 - (-3-4+3-3)$$

$$= 6 \cdot (-1) = -6$$