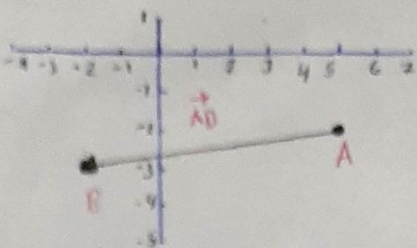


① Puntos: $A(5, 2)$ y $B(-2, -3)$ * construir vector



$$\vec{AB} = B - A$$

$$\vec{AB} = B(-2, -3) - A(5, 2)$$

$$\vec{AB} = (-2-5, -3-2)$$

$$\vec{AB} = (-7, -5)$$

* Magnitud de un vector

$$|D| = \sqrt{x^2 + y^2}$$

$$|AB| = \sqrt{49 + 25}$$

$$|AB| = \sqrt{74} = 8.6$$

* Direccion del vector

$$\alpha = \tan^{-1}\left(\frac{y}{x}\right)$$

$$\alpha = \tan^{-1}\left(\frac{-5}{-7}\right)$$

$$\alpha = 35.5^\circ$$

② Vectores: $a(5, 2)$, $b(-1, 7)$ y $c(-1, -4)$ calcular: $2b + 3(a+c) + 2a$

$$2(-1, 7) + 3[(5, 2) + (-1, -4)] + 2(5, 2)$$

$$2(-1, 7) + 3(4, -2) + 2(5, 2)$$

$$(-2, 14) + (12, -6) + (10, 4)$$

$$(-2 + 12 + 10; 14 + (-6) + 4)$$

$$(20, 12)$$

③ Vectores: $A = 3i + 5j$, $B = 7i - 2j$

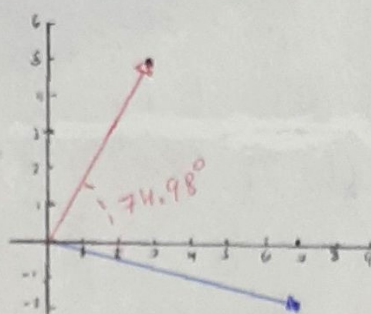
$$A \cdot B = (3)(7) + (5)(-2) = 21 - 10 = 11$$

$$|A| = \sqrt{9 + 25} = \sqrt{34}$$

$$|B| = \sqrt{49 + 4} = \sqrt{53}$$

$$\cos \alpha = \frac{11}{\sqrt{34} \cdot \sqrt{53}} = \frac{11}{\sqrt{1802}} = 0.25912$$

$$\cos^{-1} \cos \alpha = \cos^{-1}(0.25912) = 74.98^\circ$$



④ $P = 5i - 2j - k$ y $Q = 4i - 7j + 3k$ $P \times Q$

$$P \times Q = \begin{vmatrix} i & j & k \\ 5 & -2 & 0 \\ 4 & -7 & 3 \end{vmatrix} = P \times Q \begin{vmatrix} -2 & 0 \\ -7 & 3 \end{vmatrix} i - \begin{vmatrix} 5 & 0 \\ 4 & 3 \end{vmatrix} j + \begin{vmatrix} 5 & -2 \\ 4 & -7 \end{vmatrix} k$$

$$P \times Q = [(-2)(3) - (0)(-7)]i - [5(3) - (0)(4)]j + [5(-7) - (-2)(4)]k$$

$$P \times Q = [-6 + 0]i - [15 + 0]j + [-35 + 8]k$$

$$P \times Q = -6i - 15j + 27k$$

⑤ Punto: $P_0(8, -2)$ Vector: $V = (2, 7)$

Parametrica: $X = x_0 + (a)t$ $x = (8) + (2)t$

$Y = y_0 + (b)t$ $y = (-2) + (7)t$

Vectorial: $(x, y) = (x_0, y_0) + t(a, b)$

$(x, y) = (8, -2) + t(2, 7)$