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**Nombre del trabajo: Angulo entre dos  
vectores**

**Materia: Calculo vectorial**

**PASIÓN POR EDUCAR**

**Grado: Tercer cuatrimestre**

**Grupo: ISC13SDC0119-F**

① Vectores:  $A = 4i + 3j$  y  $B = 5i - 2j$

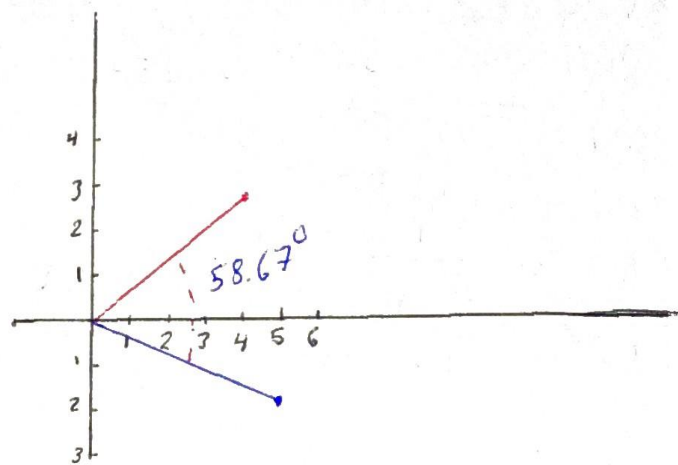
$$A \cdot B = (4)(5) + (3)(-2) = 20 - 6 = 14$$

$$|A| = \sqrt{16 + 9} = \sqrt{25}$$

$$|B| = \sqrt{25 + 4} = \sqrt{29}$$

$$\cos \alpha = \frac{14}{\sqrt{25} \cdot \sqrt{29}} = \frac{14}{\sqrt{725}} = 0.51994$$

$$\cos^{-1} \cos \alpha = \cos^{-1}(0.51994) = \underline{\underline{58.67^\circ}}$$



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

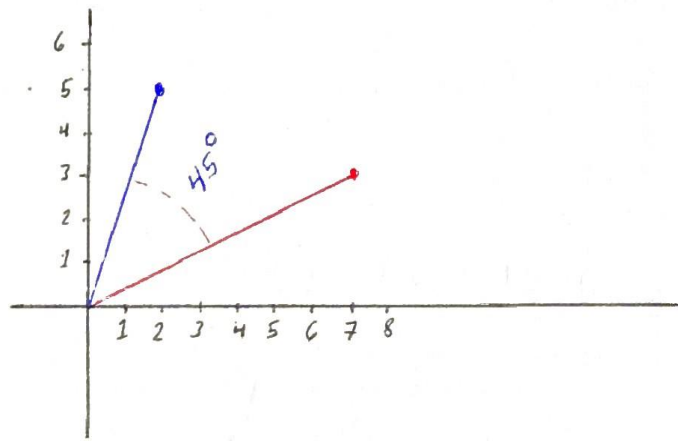
$$A \cdot B = (7)(2) + (3)(5) = 14 + 15 = 29$$

$$|A| = \sqrt{49 + 9} = \sqrt{58}$$

$$|B| = \sqrt{4 + 25} = \sqrt{29}$$

$$\cos \alpha = \frac{29}{\sqrt{58} \cdot \sqrt{29}} = \frac{29}{\sqrt{1682}} = 0.71873$$

$$\cos^{-1} \cos \alpha = \cos^{-1}(0.71873) = \underline{\underline{45^\circ}}$$



③ Vectores:  $A = 3i + 5j$  y  $B = 4i + j$

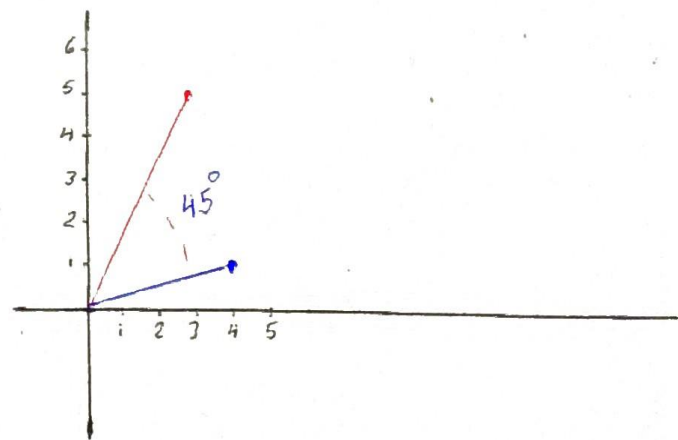
$$A \cdot B = (3)(4) + (5)(1) = 12 + 5 = 17$$

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

$$|B| = \sqrt{16 + 1} = \sqrt{17}$$

$$\cos \alpha = \frac{17}{\sqrt{34} \cdot \sqrt{17}} = \frac{17}{\sqrt{578}} = 0.70710$$

$$\cos^{-1} \cos \alpha = \cos^{-1}(0.70710) = \underline{\underline{45^\circ}}$$



④ Vectores:  $A = 5i + 2j$  y  $B = 3i + 6j$

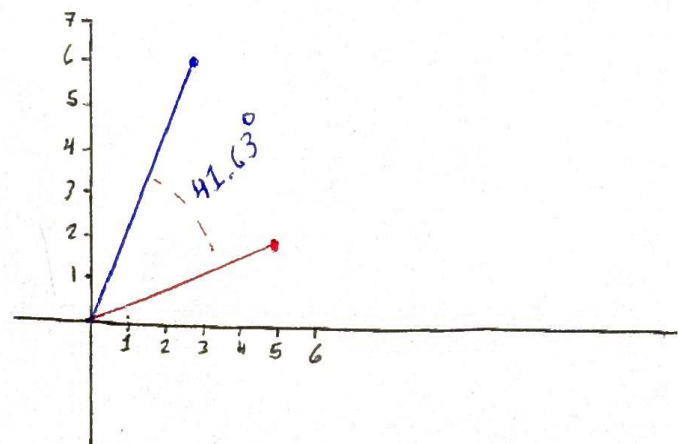
$$A \cdot B = (5)(3) + (2)(6) = 15 + 12 = 27$$

$$|A| = \sqrt{25 + 4} = \sqrt{29}$$

$$|B| = \sqrt{9 + 36} = \sqrt{45}$$

$$\cos \alpha = \frac{27}{\sqrt{29} \cdot \sqrt{45}} = \frac{27}{\sqrt{1305}} = 0.74740$$

$$\cos^{-1} \cos \alpha = \cos^{-1}(0.74740) = \underline{\underline{41.63^\circ}}$$



⑤ Vectores:  $M = -3i + 7j$  y  $N = -5i - 2j$

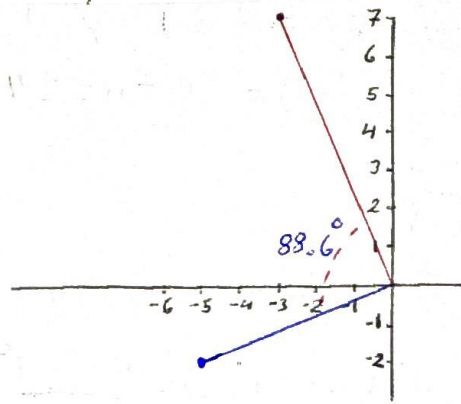
$$M \cdot N = (-3)(-5) + (7)(-2) = 15 - 14 = 1$$

$$|M| = \sqrt{9 + 49} = \sqrt{58}$$

$$|N| = \sqrt{25 + 4} = \sqrt{29}$$

$$\cos \alpha = \frac{1}{\sqrt{58} \cdot \sqrt{29}} = \frac{1}{\sqrt{1682}} = 0.02438$$

$$\cos^{-1} \cos = \cos^{-1}(0.02438) = \underline{\underline{88.6^\circ}}$$



⑥ Vectores:  $U = (-2, 1, 3)$  y  $V = (1, 3, 2)$

$$U \cdot V = (-2)(1) + (1)(3) + (3)(2) = -2 + 3 + 6 = 7$$

$$|U| = \sqrt{4 + 1 + 9} = \sqrt{14}$$

$$|V| = \sqrt{1 + 9 + 4} = \sqrt{14}$$

$$\cos \alpha = \frac{7}{\sqrt{14} \cdot \sqrt{14}} = \frac{7}{14} = 0.5$$

$$\cos^{-1} \cos = \cos^{-1}(0.5) = 60^\circ$$