

(3) Dados $v = (-1, 2, 0)$, $w = (2, -3, -1)$ y $u = (1, -1, 1)$, verificar que:

$$\langle 2v + 3w, -u \rangle = -2\langle v, u \rangle - 3\langle w, u \rangle$$

$$\langle 2v+3w, -u \rangle = -2\langle v, u \rangle - 3\langle w, u \rangle$$

$$\langle 2(-1, 2, 0) + 3(2, -3, -1), -(1, -1, 1) \rangle = -2\langle (-1, 2, 0), (1, -1, 1) \rangle - 3\langle (2, -3, -1), (1, -1, 1) \rangle$$

$$\langle (-2, 4, 0) + (6, -9, -3), (-1, 1, -1) \rangle = -2((-1)1 + 2(-1) + 0 \cdot 1) - 3(2 \cdot 1 + (-3)(-1) + (-1)1)$$

$$\langle (-2+6, 4+(-9), 0+(-3)), (-1, 1, -1) \rangle = -2(-1 + (-2)) - 3(2 + 3 + (-1))$$

$$\langle (4, -5, -3), (-1, 1, -1) \rangle = -2(-3) - 3(4)$$

$$4(-1) + (-5)1 + (-3)(-1) = 6 - 12$$

$$-4 + (-5) + 3 = -6$$

$$-6 = -6$$