

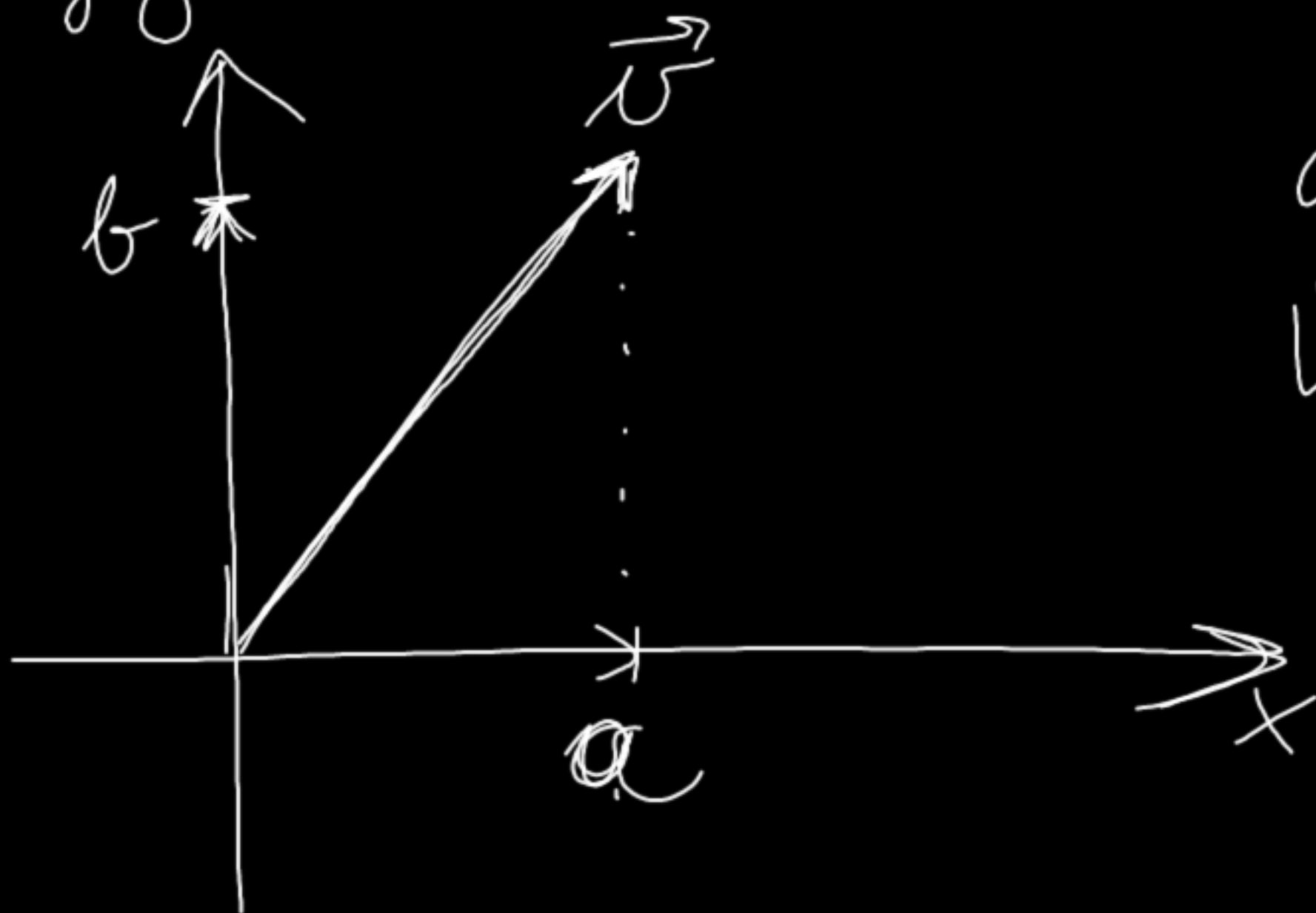
$$(1,0), (0,1) \quad \textcircled{B} \checkmark$$

$$\text{orthog.} \because \langle (1,0), (\textcircled{0},1) \rangle = 0 \rightarrow \text{OK} \checkmark$$

$$\|(1,0)\| = \sqrt{1^2 + 0^2} = 1$$

$$\|(\textcircled{0},1)\| = \sqrt{0^2 + 1^2} = 1$$

23. fejezet



$$a + b = v$$

$v = " \times \text{tengely} "$

22. feladat

2, $x = (1, -2, -3, 5)$, $y = (-1, 2, -1, 0)$, $z = (2, -1, 1, 3)$

a, $\langle x, y \rangle = 1 \cdot (-1) + (-2) \cdot 2 + (-3) \cdot (-1) + 5 \cdot 0 = -2$

b, $\|x\| = \sqrt{1^2 + (-2)^2 + (-3)^2 + 5^2} = \dots$

c, $\|x - z\|^2 = \|(-1, -1, -4, 2)\|^2 = 1 + 1 + 16 + 4 = 22$

e, z irányú egységvektor: $\|z\| = \sqrt{4 + 1 + 1 + 9} = \sqrt{15} \rightarrow \frac{1}{\sqrt{15}} \cdot (2, -1, 1, 3)$

z -vel ellentétes egységvektor: $-\frac{1}{\sqrt{15}} \cdot (2, -1, 1, 3)$

d, KF

$$3, u_1 = (1, 1, 1, 1), u_2 = (1, -1, -1, 1), u_3 = (-1, 0, 0, 1)$$

a, Biz. be, hogy u_1, u_2, u_3 OL:

$$\langle u_1, u_2 \rangle = 0$$

$$\langle u_1, u_3 \rangle = 0$$

$$\langle u_2, u_3 \rangle = 0$$

$$\langle u_3, u_2 \rangle = 0$$

LG, HF

$$\|u_1 + u_2 + u_3\|^2 = \|u_1\|^2 + \|u_2\|^2 + \|u_3\|^2$$

HF: $\text{vgl} := \{\text{összes min}\} = \text{Span}(\dots)$

Alte're mondj'unk példát!