

(3.)

$$x \mapsto \frac{d}{n}$$

$$y \mapsto \frac{d}{n} y$$

$$n \mapsto n$$

$$d = -1$$

$$A = (0, 0, -4)$$

$$B = (6, 0, 0)$$

$$a) \quad C = \left(\frac{12}{5}, 0, -\frac{12}{5} \right)$$

$$D = \left(5, 0, -\frac{2}{3} \right)$$

$$5 \mapsto \frac{3}{2}$$

$$0 \mapsto 0$$

$$-\frac{2}{3} \mapsto -\frac{2}{3}$$

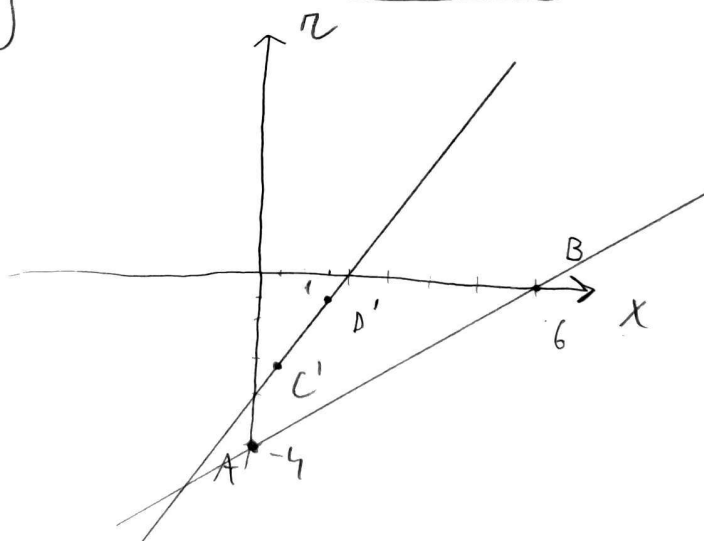
$$\frac{12}{5} \mapsto \frac{5}{12}$$

$$0 \mapsto 0$$

$$-\frac{12}{5} \mapsto -\frac{12}{5}$$

$$\Rightarrow C' = \left(\frac{5}{12}, 0, -\frac{12}{5} \right)$$

$$\Rightarrow D' = \left(\frac{3}{2}, 0, -\frac{2}{3} \right)$$

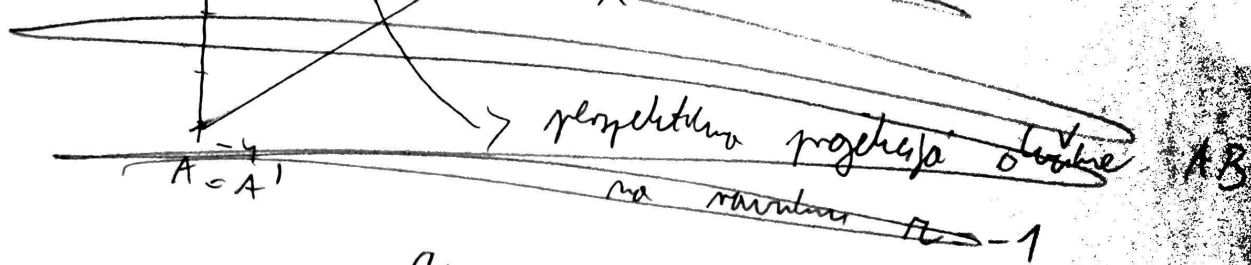


Verificamos vetores $\vec{a}' = D' - C'$ e $\vec{b}' = B - A$. Como se trata de
 duas retas paralelas, então é esperada: $\vec{a}' \cdot \vec{b}' = \|\vec{a}'\| \cdot \|\vec{b}'\|$, pois
 $\cos 0^\circ = 1$.

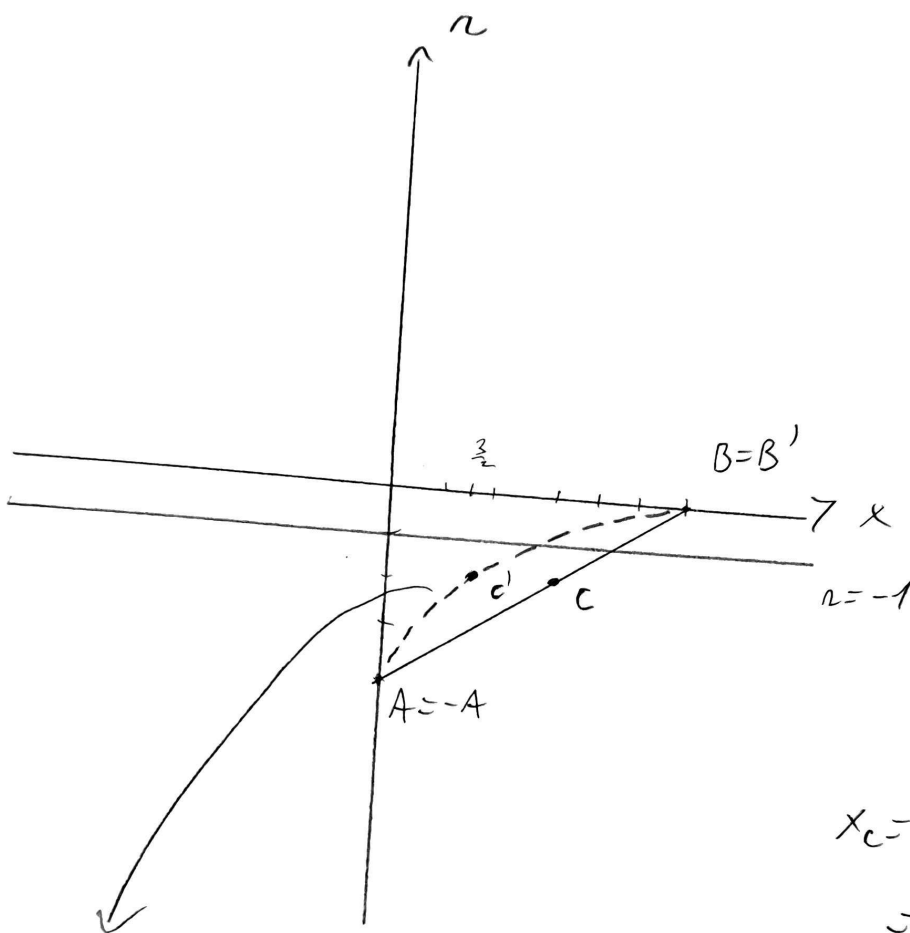
$$\left. \begin{aligned} \vec{a}' &= \left(\frac{13}{12}, 0, \frac{26}{15} \right) \Rightarrow \|\vec{a}'\| = \frac{13\sqrt{89}}{60} = 2.044 \\ \vec{b}' &= (6, 0, 4) \Rightarrow \|\vec{b}'\| = 2\sqrt{13} = 7.211 \end{aligned} \right\} \|\vec{a}'\| \cdot \|\vec{b}'\| = 14.74$$

$$\vec{a}' \cdot \vec{b}' = \frac{13}{2} + \frac{104}{15} = \frac{403}{30} = 13.433$$

Portanto, $\vec{a}' \cdot \vec{b}' \neq \|\vec{a}'\| \cdot \|\vec{b}'\|$ as retas não são paralelas.



b)



pers. projekcija
dužine AB

$$x_C = \frac{1}{2} (x_A + x_B)$$

$$= 3$$

$$x_{C'} = \frac{d}{r_A + r_B} (x_A + x_B)$$

$$= \frac{3}{2}$$