(3.) $x \mapsto \frac{d}{z}x$, $y \mapsto \frac{d}{z}y$, $z \mapsto z$

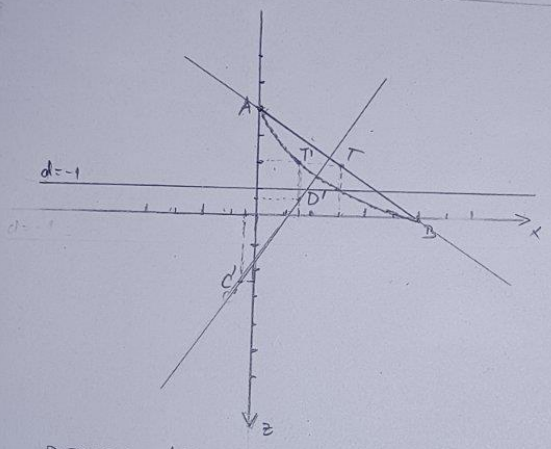
$d=-1$, $A=(0,0,-4)$, $B=(6,0,0)$, $A=A'$, $B=B'$

a) $C=(\frac{12}{5},0,\frac{12}{5})$ $x_{C'}=-\frac{1}{\frac{12}{5}}=-\frac{5}{12}\approx -0{,}42$ $y_{C'}=-\frac{1}{\frac{12}{5}}\cdot 0=0$

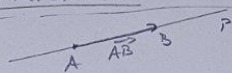
$z_{C'}=\frac{12}{5}=2{,}4$ $\boxed{C'=(-\frac{5}{12},0,\frac{12}{5})}$

$D=(5,0,-\frac{2}{3})$ $x_{D'}=-\frac{1}{-\frac{2}{3}}=\frac{3}{2}=1{,}5$, $y_{D'}=\frac{-1}{-\frac{2}{3}}\cdot 0=0$

$z_{D'}=-\frac{2}{3}$ $\boxed{D'=(\frac{3}{2},0,-\frac{2}{3})}$



• paralelnost



pravac p s vektorom smjera $\vec{s}=[a,b,c]$ kroz točku (x_0,y_0,z_0)

$p\dots \frac{x-x_0}{a}=\frac{y-y_0}{b}=\frac{z-z_0}{c}$

$\overrightarrow{AB}$ vektor smjera $[a,b,c]=[x_B-x_A,\ y_B-y_A,\ z_B-z_A]$

Acp. $(x_0,y_0,z_0)=A$

pravac AB

$\overrightarrow{AB}=[6,0,4]$

$p_{AB}\dots \frac{x}{6}=\frac{y}{0}=\frac{z+4}{4}$

$\overrightarrow{C'D'}=[\frac{23}{12},0,-\frac{46}{15}]$

$p_{C'D'}\dots \frac{x+\frac{5}{12}}{\frac{23}{12}}=\frac{y}{0}=\frac{z-\frac{12}{5}}{-\frac{46}{15}}$

$p_{AB}\parallel p_{C'D'} \Leftrightarrow \overrightarrow{AB}\parallel\overrightarrow{C'D'} \Leftrightarrow [6,0,4]\parallel[\frac{23}{12},0,-\frac{46}{15}]$

$6=n\frac{23}{12} \Rightarrow \boxed{n=\frac{72}{23}}$ / $0=n\cdot 0$ $0=0$ / $4=n(-\frac{46}{15})$

$4=\frac{72}{23}\cdot(-\frac{46}{15})$

$4\neq\frac{48}{5}$

$p_{AB}\nparallel p_{C'D'}$

b) $x_T=\frac{1}{2}(x_A+x_B)=\frac{1}{2}(0+6)=3$

$y_T=\frac{1}{2}(y_A+y_B)=0$

$z_T=\frac{1}{2}(z_A+z_B)=-2$

$T=(3,0,-2)$

$T'=(\frac{3}{2},0,-2)$

$x_{T'}=\frac{d}{z_A+z_B}(x_A+x_B)=\frac{-1}{-4}6=\frac{3}{2}$

$y_{T'}=\frac{d}{z_A+z_B}(y_A+y_B)=\frac{1}{4}\cdot 0=0$

$z_{T'}=\frac{1}{2}(z_A+z_B)=-2$