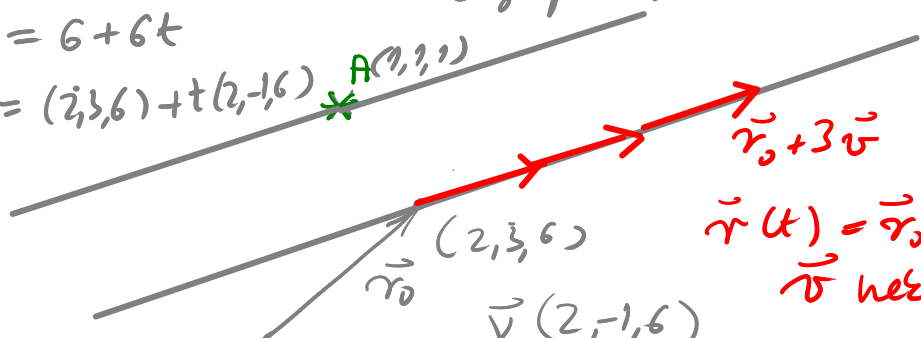


<https://www.youtube.com/watch?v=0u3EYjsraYI> (jednadžbe pravca u 3d)

Zadatak. Neka je zadan pravac parametarskim jednadžbama

$$P \begin{cases} x = 2 + 2t \\ y = 3 - t \\ z = 6 + 6t \end{cases}$$
 Nadi pravac $q \parallel p$
 koji prolazi kroz $A(1, 1, 1)$

$$\vec{r} = (2, 3, 6) + t(2, -1, 6)$$



$$q \begin{cases} x = 1 + 2t & \Rightarrow t = \frac{x-1}{2} \\ y = 1 - t & \Rightarrow t = -y + 1 \\ z = 1 + 6t & \Rightarrow t = \frac{z-1}{6} \end{cases}$$

$$\frac{x-1}{2} = \frac{y-1}{-1} = \frac{z-1}{6}$$

$$\vec{v} = (2, -1, 6)$$

$$(x_0, y_0, z_0) \quad \vec{v} = (v_x, v_y, v_z)$$

$$\frac{x-x_0}{v_x} = \frac{y-y_0}{v_y} = \frac{z-z_0}{v_z} \text{ normalna s j pravca}$$

Zadatak. Zadan je četverokut s okomitim dijagonalama i slijedećim kutevima:

$\alpha, \beta, \alpha', \beta'$ su zadani. Površina je 100 m^2 .
 (3 su dovoljne) β' ne treba. Nadi sve stranice četverokuta.

$P = \frac{1}{2} d_1 d_2$

$d = a \frac{\sin \alpha'}{\sin \alpha}$
 $c = a \frac{\sin \alpha'}{\sin \alpha} \cdot \frac{\cos \alpha}{\cos \beta}$
 $b = a \frac{\cos \alpha'}{\cos \beta'}$

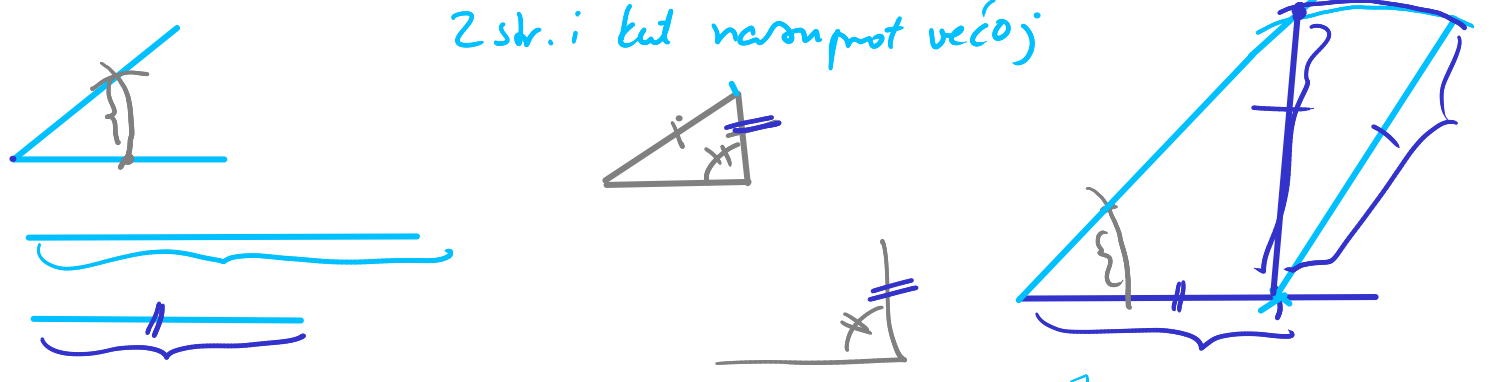
$$P = \frac{1}{2} (a \cos \alpha' \cdot a \sin \alpha' + a \sin \alpha' \cdot a \sin \alpha' \cdot \text{ctg} \alpha + a \sin \alpha' \cdot \text{ctg} \alpha \cdot a \sin \alpha' \cdot \text{ctg} \alpha \cdot \text{tg} \beta + a \sin \alpha' \cdot \text{ctg} \alpha \cdot \text{tg} \beta \cdot a \cos \alpha') = \frac{a^2}{2} (\dots)$$

$$P = \frac{1}{2} (a \cos \alpha' \cdot a \sin \alpha' + a \sin \alpha' \cdot a \sin \alpha' \operatorname{ctg} \alpha + a \sin \alpha' \operatorname{ctg} \alpha \cdot a \sin \alpha' \operatorname{ctg} \alpha \operatorname{tg} \beta + a \sin \alpha' \operatorname{ctg} \alpha \operatorname{tg} \beta \cdot a \cos \alpha') = \frac{a^2}{2} (\dots)$$

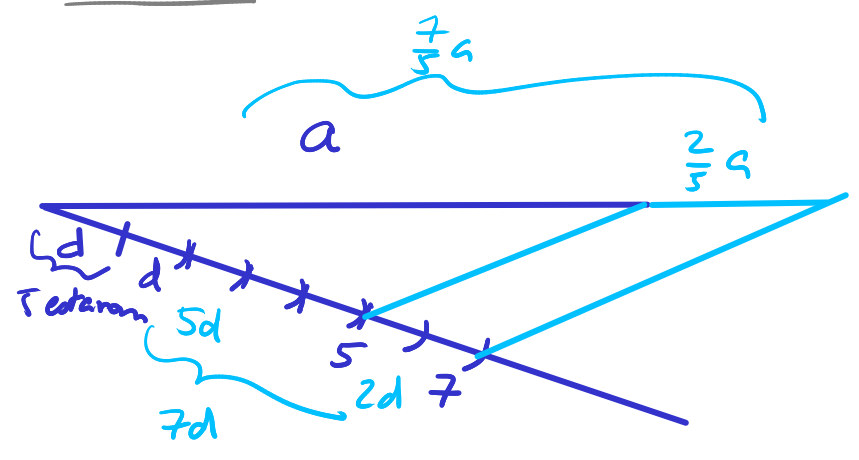
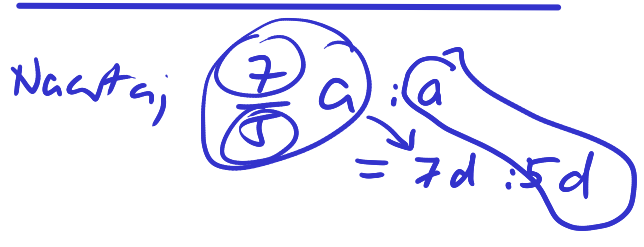
$$a^2 = \frac{2P}{\cos \alpha' \sin \alpha' + \sin^2 \alpha' \operatorname{ctg} \alpha + \sin^2 \alpha' \operatorname{ctg} \alpha \operatorname{tg} \beta + \sin \alpha' \cos \alpha' \operatorname{ctg} \alpha \operatorname{tg} \beta}$$

$$a = \sqrt{\frac{200 \text{ m}^2}{\dots}} = \frac{10\sqrt{2} \text{ m}}{\sqrt{\dots}}$$

Zstr. i kut nasuprot većoj

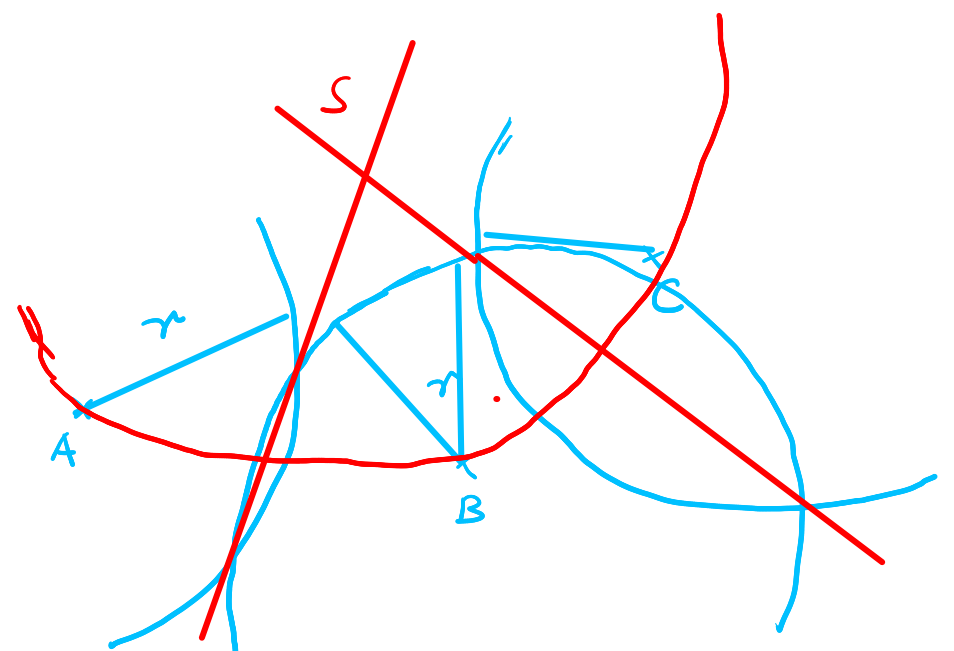


Proporcione line dufine a

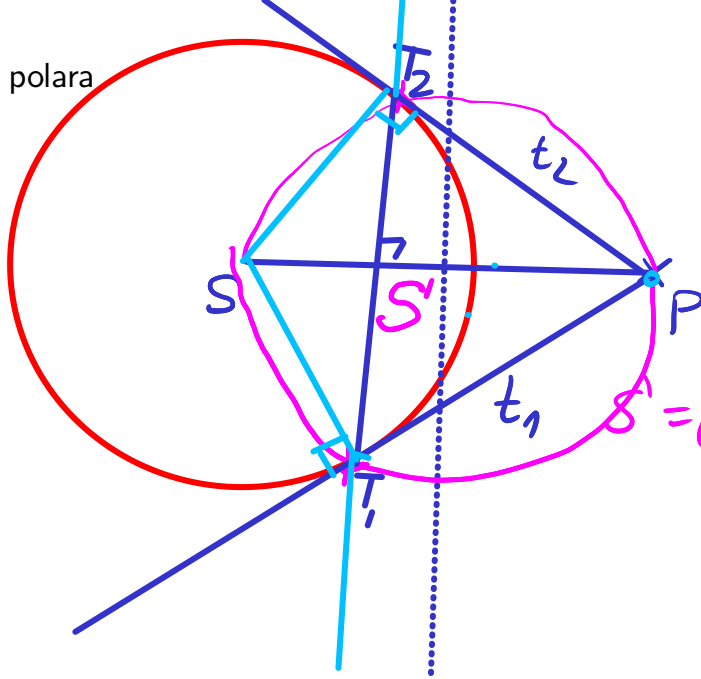


ovdje smo koristili Talesov teorem o proporcionalnosti

Kružnica kroz tri zadane točke



Tangente i polara

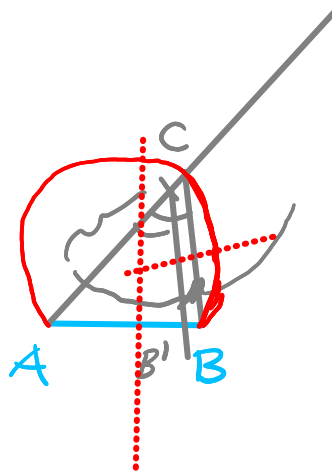
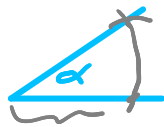
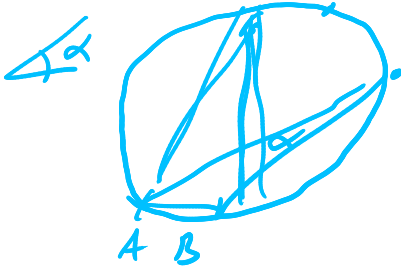


Talesov teorem o obodnom kutu nad promjerom (svaki takav je pravi)

T_1T_2 polara točke P
 $T_1T_2 \perp SP$

$S' = \text{polarna od } P \text{ i } P$
 $PT_2 \perp ST_2$
 $PT_1 \perp ST_1$

Zadan je kut alfa pod kojim se iz neke točke vidi zadana dužina. Nađi geometrijsko mjesto svih takvih točaka s takvim opisom (to je luk kružnice nad tetivom, koristi se teorem o središnjem i obodnom kutu).



PAUZA 15 MINUTA DO
 16:50