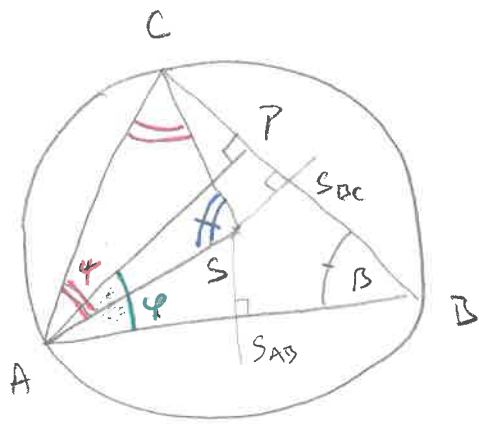


1)



ozn. $\varphi = |\sphericalangle BAP|$ $\beta = |\sphericalangle ABC|$

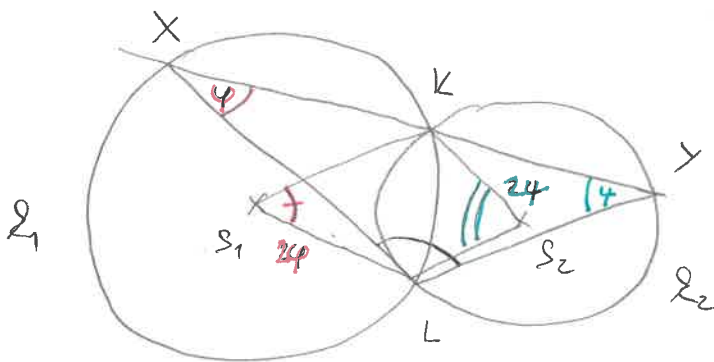
$\psi = |\sphericalangle SAC|$

$\Delta BTA: \varphi = 90^\circ - \beta$ //

$|\sphericalangle ASC| = 2\beta = 2|\sphericalangle ABC| =$
 \uparrow středový \uparrow obvodový

ΔASC je vr $\Rightarrow \psi = \frac{1}{2}(180^\circ - 2\beta) =$
 $= 90^\circ - \beta$ //

2)



ozn. $|\sphericalangle KS_1L| = 2\psi$

$|\sphericalangle KS_2L| = 2\phi$...

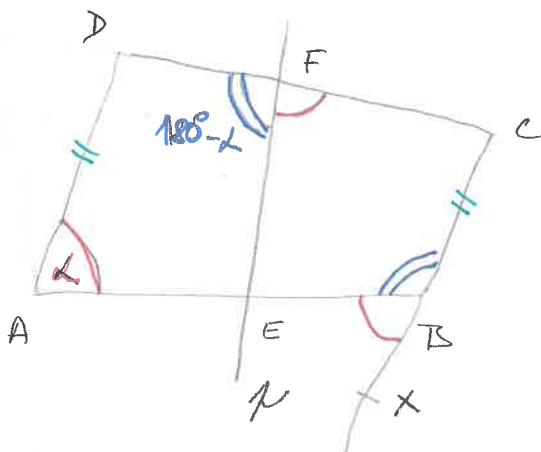
$\Rightarrow \varphi$ i ψ jsou pro danou polohu kružnic konstantní

$\Rightarrow |\sphericalangle KXL| = \psi$
 \uparrow obvodový úhel ke středovému o velikosti 2ψ

$|\sphericalangle KYL| = \phi \leftarrow$ obvodový úhel ke středovému o velikosti 2ϕ

$\Rightarrow |\sphericalangle XLY| = 180^\circ - (\psi + \phi) \dots$ je konstantní

3)



ozn. $\alpha = |\sphericalangle DAB| \Rightarrow |\sphericalangle DFE| =$

$= 180^\circ - \alpha$ (AEFD je tetivový) \Rightarrow

$\Rightarrow |\sphericalangle CFE| = \alpha$ (vedlejší k $\sphericalangle DFE$)

$\Rightarrow |\sphericalangle CBE| = |\sphericalangle CBA| = 180^\circ - \alpha$

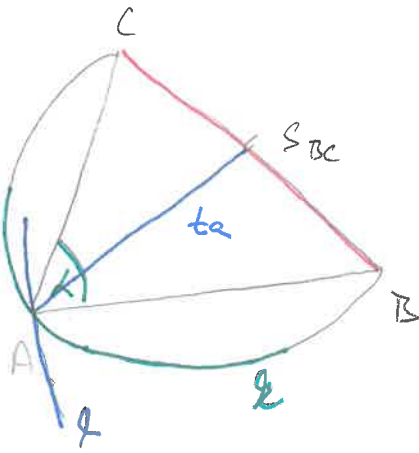
(EBCF je tetivový) $\Rightarrow |\sphericalangle ABX| = \alpha \Rightarrow$

(rovnost střetových úhlů) $\Rightarrow AD \parallel BC$

$\Rightarrow |\sphericalangle DAB| = |\sphericalangle ABX| = \alpha$

4) a) D: a, α, t_a

$|BC| = a$



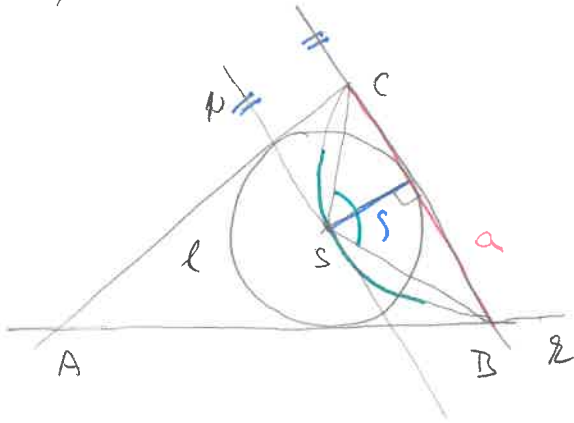
$l = \frac{1}{2} \alpha; | \angle BXC | = \alpha$

... ekvivalente

$l(S_{BC}; t_a)$

$A \in l \cap l$

b) D: a, β, s



ozn. $| \angle BAC | = \alpha, | \angle ABC | = \beta,$

$| \angle ACB | = \gamma$

$\bullet | \angle SBC | = \frac{\alpha}{2}, | \angle SCB | = \frac{\beta}{2}$
(osy uhlu)

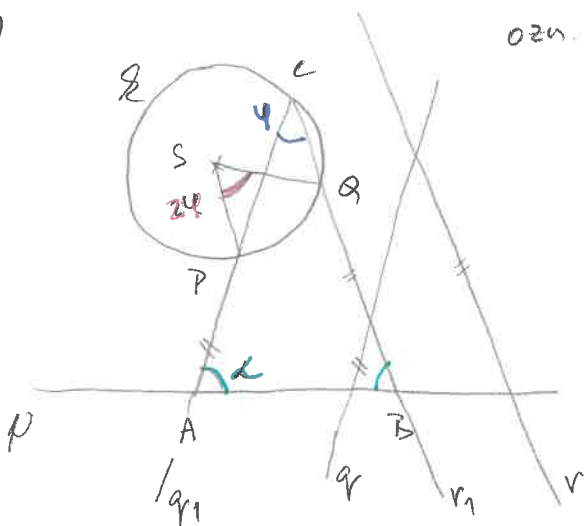
$\Rightarrow | \angle BSC | = 180^\circ - \left(\frac{\beta}{2} + \frac{\alpha}{2} \right) =$
 $= 180^\circ - \frac{1}{2} (\beta + \alpha) = 180^\circ - \frac{1}{2} (180^\circ - \alpha) =$
 $= 90^\circ + \frac{\alpha}{2}$... uhel, kterij se
znamenalo umime sestrojiti

$|p \cap BC| = s$

~~l~~ $l = \frac{1}{2} \alpha; | \angle BXC | = 90^\circ + \frac{\alpha}{2}$

$\Rightarrow S \in l \cap p \Rightarrow l(S; s)$... tečny
k uh. z B a C se protou v A

5)



ozn. $| \angle PSQ | = 2\gamma \Rightarrow | \angle PCQ | = \gamma$ (středový a
obvodový uhel) $\Rightarrow | \angle CAB | = | \angle CBA | = \frac{1}{2} (180^\circ - \gamma)$
... uhel, kterij umime sestrojiti $= \alpha = \beta$

umime q tak, aby $| \angle pqr | = \alpha$

$\Rightarrow p \in q_1 \parallel q \Rightarrow A \in p \cap q_1, C \in r \cap q_1$
(C ≠ P)

podobně $| \angle vrp | = \alpha, v_1 \parallel r, Q \in v_1$

$\Rightarrow B \in v_1 \cap p$