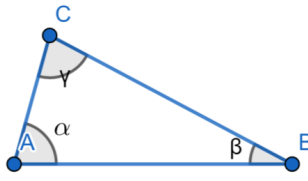
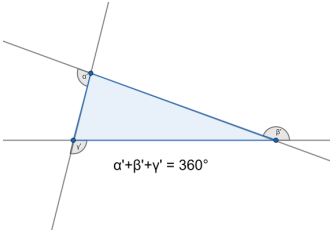
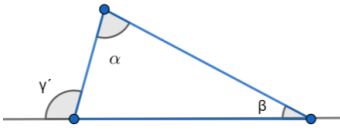
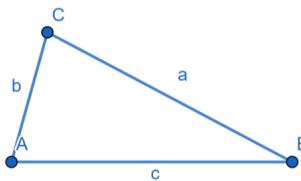
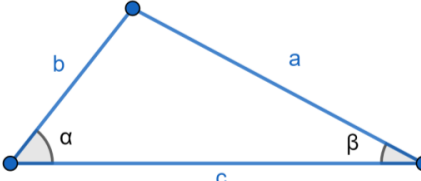
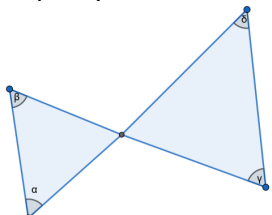
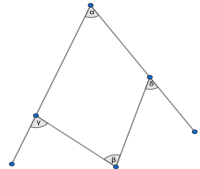
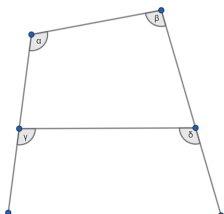
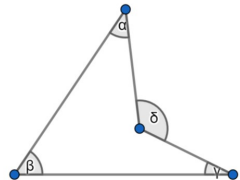
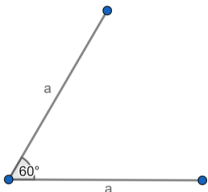
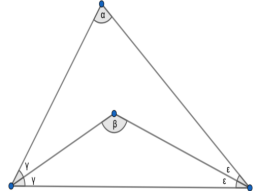
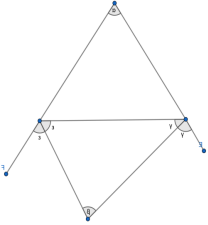
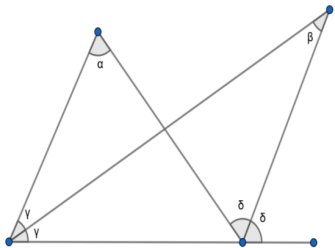
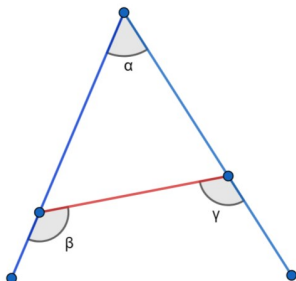
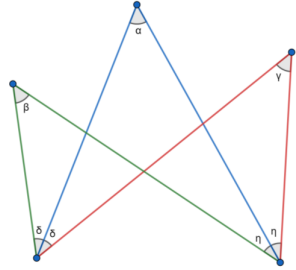
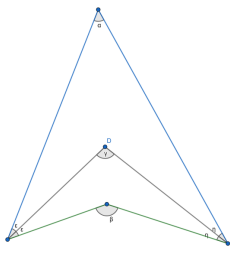


Vzorce Série 0 - trojúhelníky

1  $\alpha + \beta + \gamma = 180^\circ$	2  $\alpha' + \beta' + \gamma' = 360^\circ$	3  $\alpha + \beta = \gamma'$
4 $a - b < c < a + b$ 	5 $a > b \Leftrightarrow \alpha > \beta$ 	6 $\alpha + \beta = \gamma + \delta$ 
7 $\alpha + \beta = \gamma + \delta$ 	8 $\alpha + \beta = \gamma + \delta$ 	9 $\alpha + \beta + \gamma = \delta$ 
10 Rovnostranný trojúhelník 	11 $\beta = 90 + \frac{\alpha}{2}$ 	12 $\beta = 90 - \frac{\alpha}{2}$ 
13 $\beta = \frac{\alpha}{2}$ 	14 $\alpha + 180^\circ = \beta + \gamma$ 	15 $\alpha = \frac{\beta + \gamma}{2}$ 

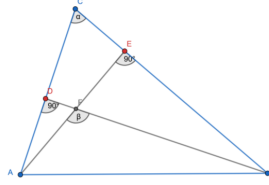
16

$$\gamma = \frac{\alpha + \beta}{2}$$



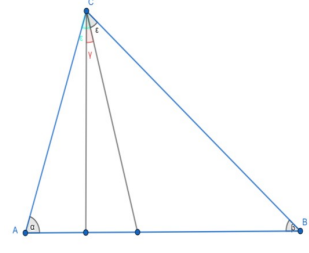
17

$$\alpha + \beta = 180^\circ$$



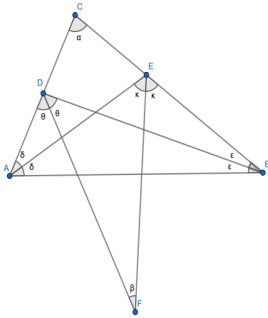
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$$\gamma = \frac{\alpha - \beta}{2}$$



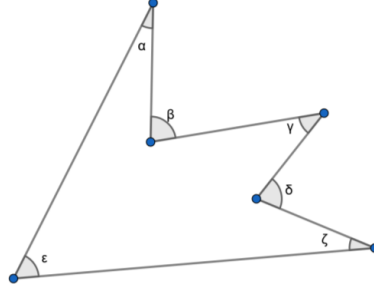
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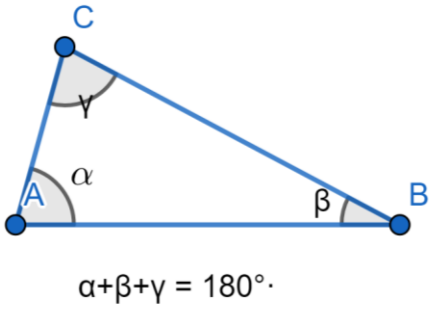
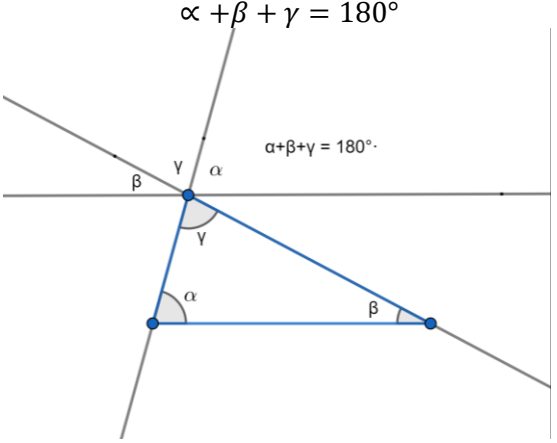
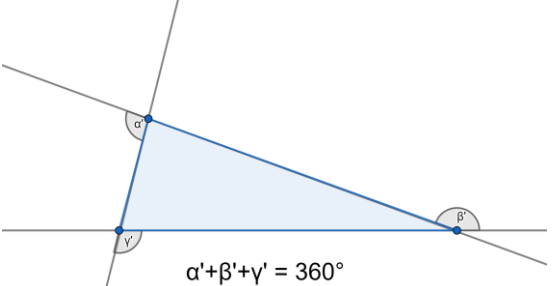
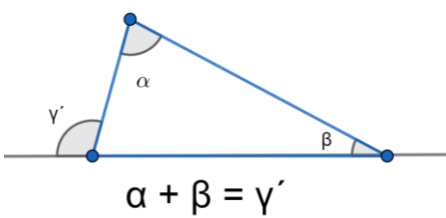
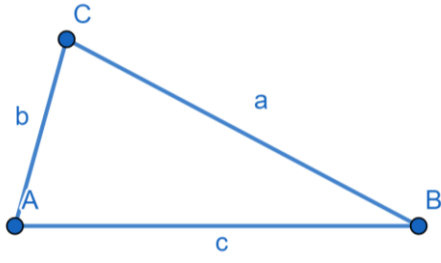
$$\beta = 45^\circ - \frac{\alpha}{4}$$

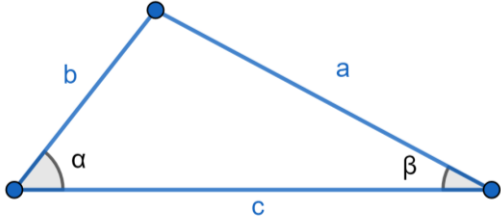
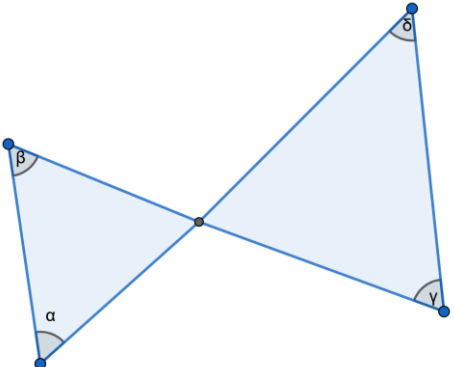
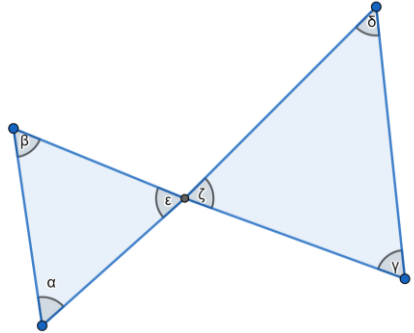
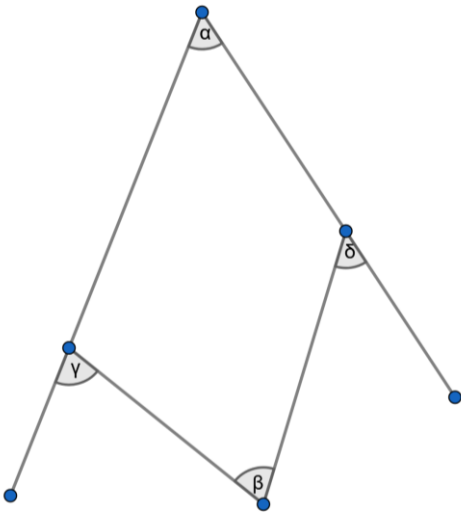
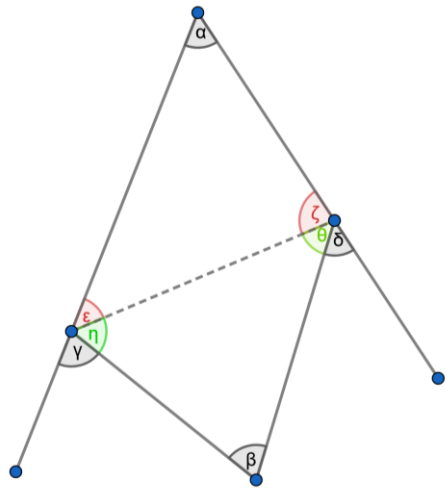


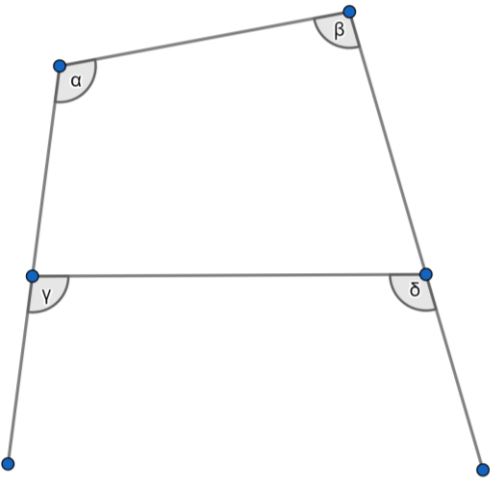
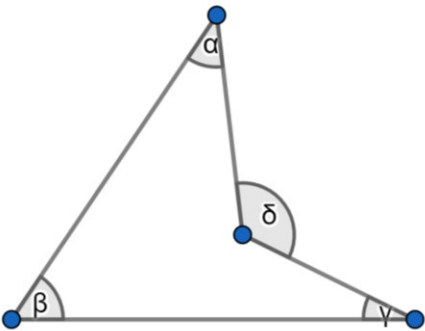
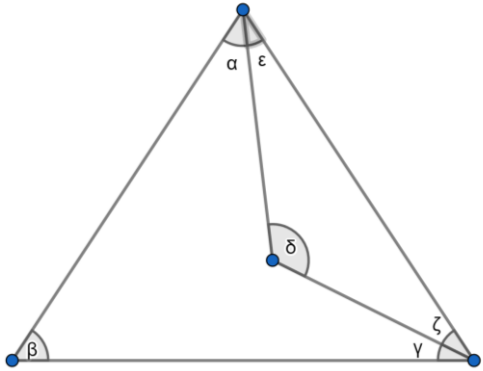
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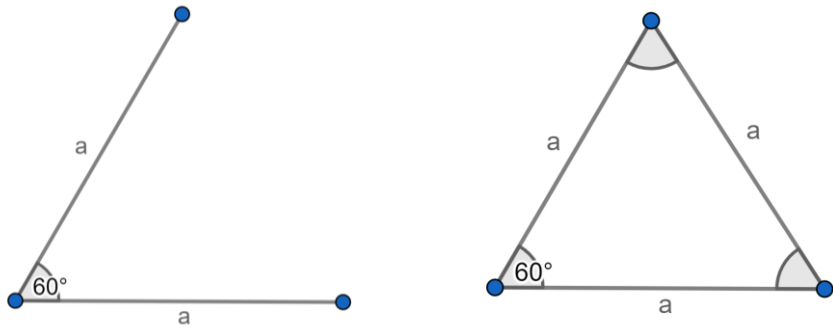
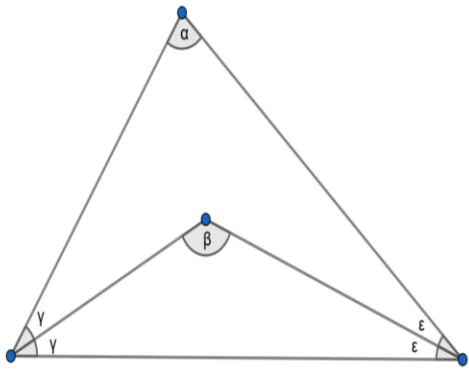
$$\alpha + \gamma + \zeta + \varepsilon = \beta + \delta$$

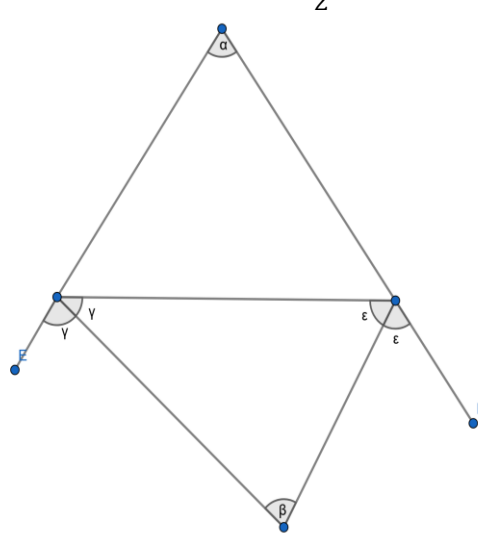
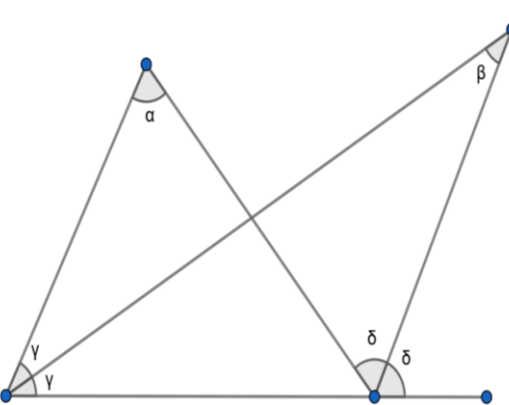


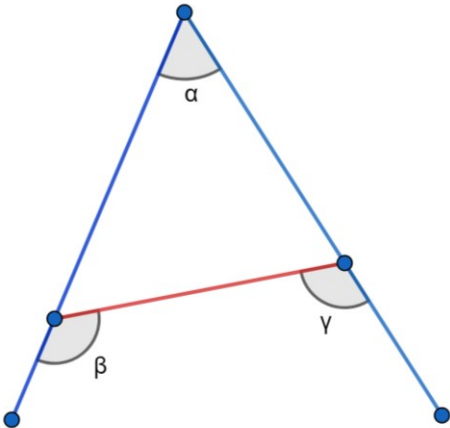
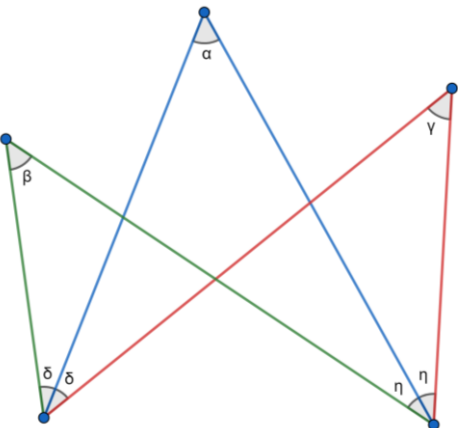
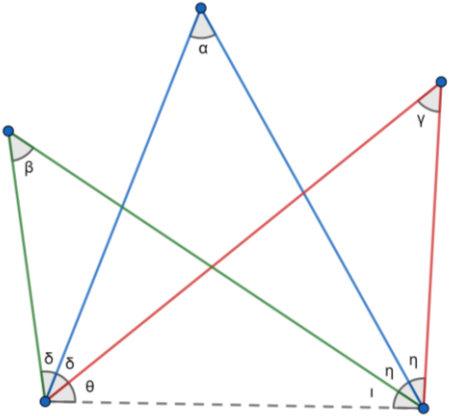
Č	Tvzení	Důkaz
1	Součet vnitřních úhlů v trojúhelníku je 180°. 	$\alpha + \beta + \gamma = 180^\circ$ 
2	Součet vnějších úhlů v trojúhelníku je 360°. 	$ \begin{aligned} &180^\circ - \alpha + 180^\circ - \beta + 180^\circ - \gamma \\ &= 3 \cdot 180^\circ - (\alpha + \beta + \gamma) \\ &= 3 \cdot 180^\circ - 180^\circ = 2 \cdot 180^\circ \\ &= 360^\circ \end{aligned} $
3	Součet dvou vnitřních úhlů v trojúhelníku je hodnota třetího vnějšího úhlu. 	$\alpha + \beta = 180^\circ - \gamma = \gamma'$
4	Trojúhelníková nerovnost 	Podmínka existence trojúhelníka $ \begin{aligned} & a - b < c < a + b \\ & c - b < a < c + b \\ & a - c < b < a + c \end{aligned} $

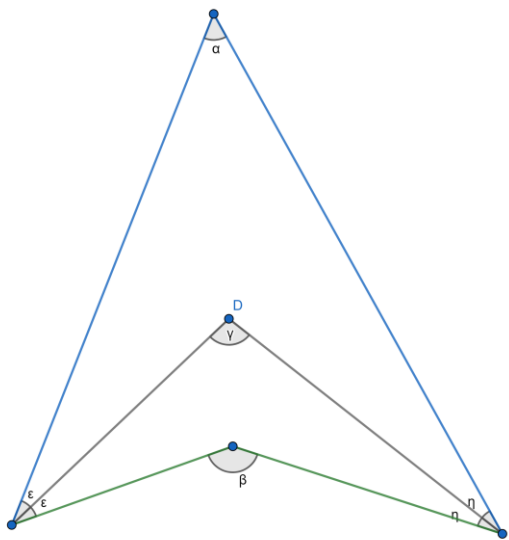
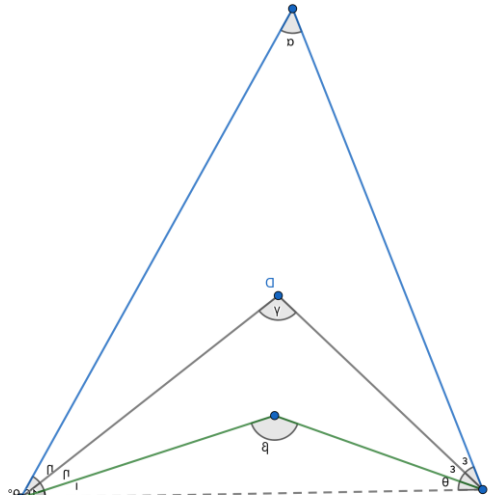
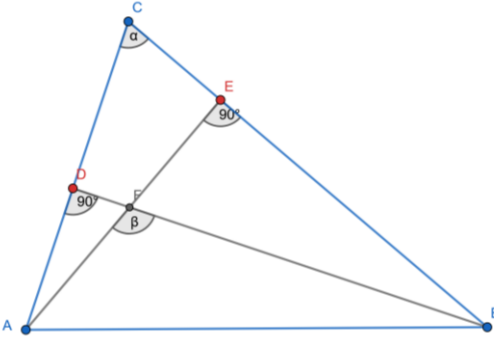
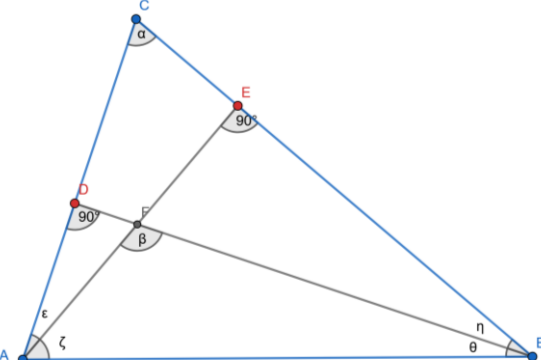
Č	Tvzení	Důkaz
5	Proti větší straně leží větší úhel. 	$a > b \Leftrightarrow \alpha > \beta$
6	$\alpha + \beta = \gamma + \delta$ 	$\varepsilon = 180^\circ - (\alpha + \beta) = \zeta = 180^\circ - (\gamma + \delta)$ $\alpha + \beta = \gamma + \delta$ 
7	$\alpha + \beta = \gamma + \delta$ 	$\alpha + \beta + \varepsilon + \eta + \theta + \delta = 360^\circ$ $\alpha + \beta + 180^\circ - \gamma + 180^\circ - \delta = 360^\circ$ $\alpha + \beta = \gamma + \delta$ 

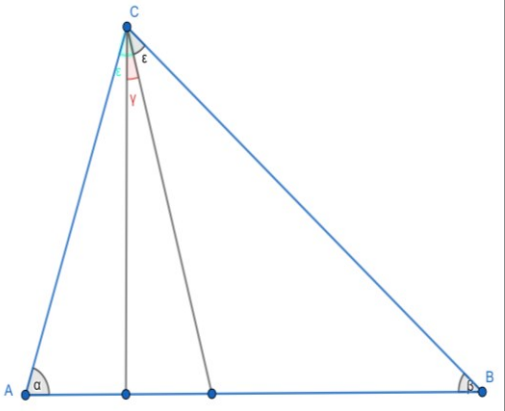
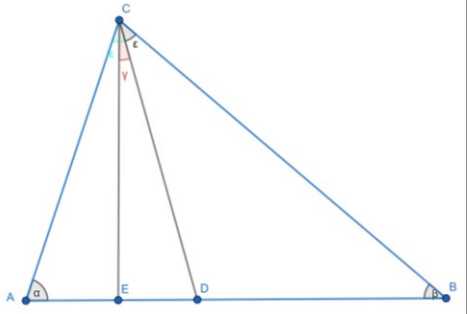
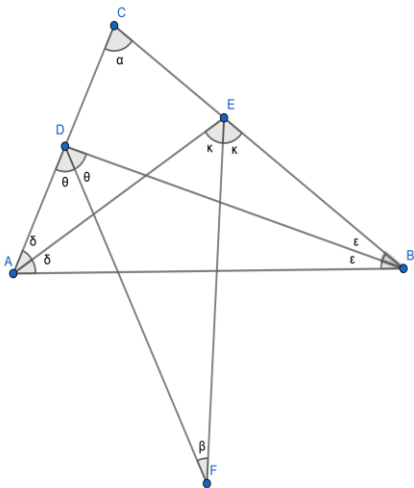
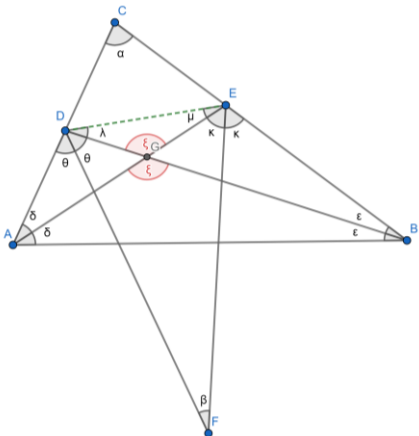
Č	Tvrzení	Důkaz
8	$\alpha + \beta = \gamma + \delta$ 	$\alpha + \beta + 180^\circ - \gamma + 180^\circ - \delta = 360^\circ$ $\alpha + \beta = \gamma + \delta$
9	$\alpha + \beta + \gamma = \delta$ 	$\alpha + \beta + \gamma + \epsilon + \zeta = 180^\circ$ $\epsilon + \zeta = 180^\circ - \delta$ $\alpha + \beta + \gamma = \delta$ 

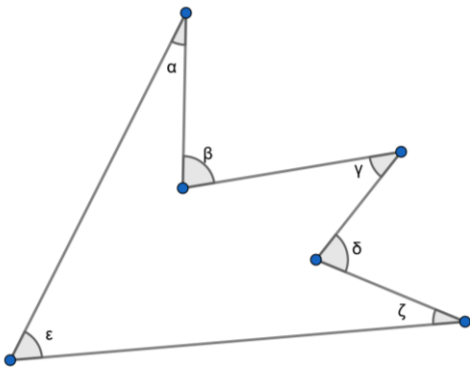
Č	Tvzení	Důkaz
10	Úhel 60 stupňů a stejná délka stran určuje rovnostranný trojúhelník 	
11	$\beta = 90 + \frac{\alpha}{2}$ 	$\alpha + \gamma + \epsilon = \beta$ z bodu 9 $\beta + \gamma + \epsilon = 180^\circ$ $\alpha + 180 - \beta = \beta$ $2\beta = 180^\circ + \alpha$ $\beta = 90 + \frac{\alpha}{2}$

Č	Tvzení	Důkaz
12	$\beta = 90 - \frac{\alpha}{2}$ 	$\begin{aligned} \beta + \gamma + \epsilon &= 180^\circ \\ \alpha + 180 - 2\gamma + 180 - 2\epsilon &= 180^\circ \\ \alpha - 2(\gamma + \epsilon) + 180^\circ &= 0 \\ \alpha - 2(180^\circ - \beta) + 180^\circ &= 0 \\ \alpha + 2\beta - 180^\circ &= 0 \\ \beta &= 90 - \frac{\alpha}{2} \end{aligned}$
13	$\beta = \frac{\alpha}{2}$ 	$\begin{aligned} \alpha + 2\gamma + 180^\circ - 2\delta &= 180^\circ \\ \beta + \gamma + 180^\circ - \delta &= 180^\circ \\ \alpha + 2\gamma - 2\delta &= 0 \\ \alpha + 2(\gamma - \delta) &= 0 \\ \beta + \gamma - \delta &= 0 \\ \beta &= \frac{\alpha}{2} \end{aligned}$

Č	Tvzení	Důkaz
14	$\alpha + 180^\circ = \beta + \gamma$ 	$\begin{aligned}\alpha + 180^\circ - \beta + 180^\circ - \gamma &= 180^\circ \\ \alpha - \beta - \gamma &= -180^\circ \\ \alpha + 180^\circ &= \beta + \gamma\end{aligned}$
15	$\alpha = \frac{\beta + \gamma}{2}$ 	$\begin{aligned}\alpha + \delta + \theta + \iota + \eta &= 180 \\ \beta + \iota + 2\delta + \theta &= 180 \\ \gamma + \theta + 2\eta + \iota &= 180 \\ \beta + \gamma + 2(\delta + \iota + \theta + \eta) &= 360 \\ \beta + \gamma + 2(180 - \alpha) &= 360 \\ \beta + \gamma - 2\alpha &= 0 \\ \alpha &= \frac{\beta + \gamma}{2}\end{aligned}$ 

Č	Tvzení	Důkaz
16	$\gamma = \frac{\alpha + \beta}{2}$ 	$\begin{aligned} \alpha + 2\varepsilon + \theta + 2\eta + \iota &= 180 \\ \beta + \iota + \theta &= 180 \\ \gamma + \eta + \iota + \varepsilon + \theta &= 180 \\ \alpha + \beta + 2(\varepsilon + \eta + \iota + \theta) &= 360 \\ \alpha + \beta + 2(180 - \gamma) &= 360 \\ \alpha + \beta - 2\gamma &= 0 \\ \gamma &= \frac{\alpha + \beta}{2} \end{aligned}$ 
17	Úhel mezi výškami $\alpha + \beta = 180^\circ$ 	$\begin{aligned} \alpha + \varepsilon + \zeta + \theta + \eta &= 180 \\ \beta + \zeta + \theta &= 180 \\ \varepsilon + \zeta + \theta &= 90 \\ \zeta + \eta + \theta &= 90 \\ \alpha + \beta + \varepsilon + \eta + 2(\zeta + \theta) &= 360 \\ \varepsilon + \eta + 2(\zeta + \theta) &= 180 \\ \alpha + \beta &= 180^\circ \end{aligned}$ 

Č	Tvrzení	Důkaz
18	Úhel mezi výškou a osou úhlu $\gamma = \frac{\alpha - \beta}{2}$ 	$\triangle DBC: \beta + \varepsilon + 90 + \gamma = 180$ $\triangle ADC: \alpha + \varepsilon + 90 - \gamma = 180$ $\alpha - \beta - 2\gamma = 0$ $\gamma = \frac{\alpha - \beta}{2}$ 
19	$\beta = 45^\circ - \frac{\alpha}{4}$ 	$\alpha + \delta + \varepsilon = \xi \text{ z bodu 9}$ $\beta + \theta + \kappa = \xi \text{ z bodu 9}$ $\alpha + \beta = \theta + \kappa \text{ z bodu 7}$ $\alpha + 2\delta + 2\varepsilon = 180$ $\alpha + \delta + \varepsilon = \beta + \theta + \kappa$ $\alpha + \delta + \varepsilon = \beta + \alpha + \beta$ $\delta + \varepsilon = 2\beta$ $\delta + \varepsilon = \frac{180 - \alpha}{2}$ $\frac{180 - \alpha}{2} = 2\beta$ $180 - \alpha = 4\beta$ $\beta = 45^\circ - \frac{\alpha}{4}$ 

Č	Tvzení	Důkaz
20	$\alpha + \gamma + \zeta + \varepsilon = \beta + \delta$ 	$\eta = \alpha + \zeta + \varepsilon \text{ z bodu 9}$ $180 - \beta + 180 - \delta + \eta + \gamma = 360$ $-\beta - \delta + \eta + \gamma = 0$ $\beta + \delta = \eta + \gamma$ $\beta + \delta = \alpha + \zeta + \varepsilon + \gamma$ 