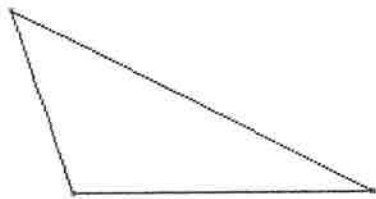


RŠITVE

VAJE ZA PREIZKUS ZNANJA - TRIKOTNIKI

1. Trikotniku na sliki označi oglišča, stranice in kote.



a) Izmeri in zapiši dolžine njegovih stranic.

$$a = \underline{5,4 \text{ cm}}, b = \underline{2,6 \text{ cm}}, c = \underline{4 \text{ cm}}$$

b) Izmeri kote:

$$\alpha = \underline{108^\circ}, \beta_1 = \underline{154^\circ}, \gamma = \underline{45^\circ}$$

c) Obkroži pravilne odgovore. Narisani trikotnik je:

ostrokotni

topokotni

pravokotni

raznostranični

enakokraki

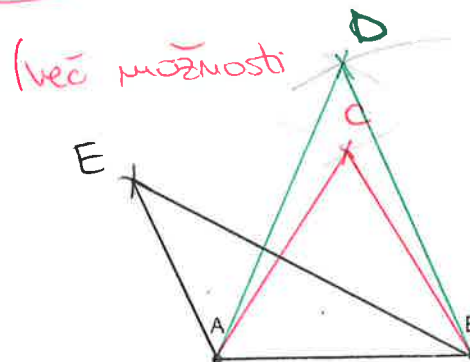
enakostranični

2. Daljica AB je stranica trikotnika ABC. Določi oglišče:

a) C tako, da bo trikotnik enakostraničen.

b) D tako, da bo trikotnik enakokrak.

c) E tako, da bo trikotnik raznostraničen.



3. Izračunaj velikost neznanih kotov na sliki. (Brez merjenja!)

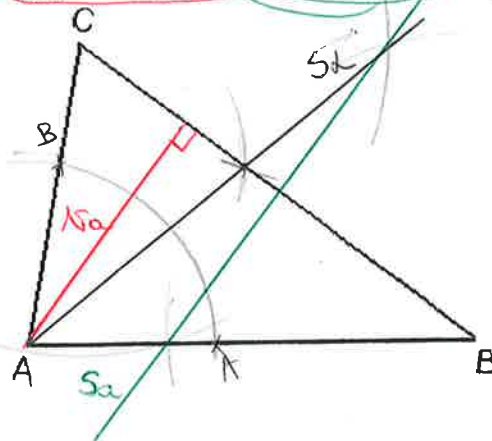
a)

$$\begin{aligned} \gamma_1 &= 180^\circ - \gamma \\ \gamma_1 &= 180^\circ - 85^\circ \\ \gamma_1 &= 95^\circ \\ \alpha_1 &= 180^\circ - 36^\circ \\ \alpha_1 &= 144^\circ \\ \gamma &= 180^\circ - \alpha - \beta \\ \gamma &= 180^\circ - 36^\circ - 59^\circ \\ \gamma &= 85^\circ \\ \beta &= 180^\circ - 121^\circ \\ \beta &= 59^\circ \end{aligned}$$

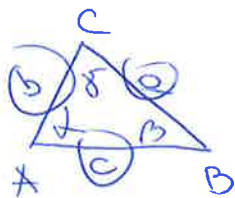
b)

$$\begin{aligned} \epsilon &= 180^\circ - \gamma - \delta = 180^\circ - 100^\circ - 26^\circ \\ \epsilon &= 54^\circ \\ \gamma &= 180^\circ - \alpha - \beta \\ \gamma &= 180^\circ - 54^\circ - 26^\circ \\ \gamma &= 100^\circ \\ \beta &= \delta = 26^\circ \text{ (kot z vzporednicami)} \\ \alpha &= 180^\circ - 126^\circ \\ \alpha &= 54^\circ \end{aligned}$$

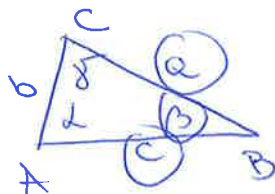
4. Trikotniku ABC načrtaj višino na stranico a, simetralo stranice a in kota α .



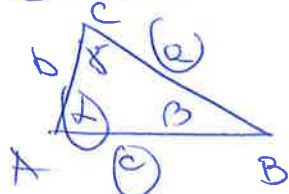
5. $a = 6\text{cm}$
 $b = 4\text{cm}$
 $c = 5\text{cm}$



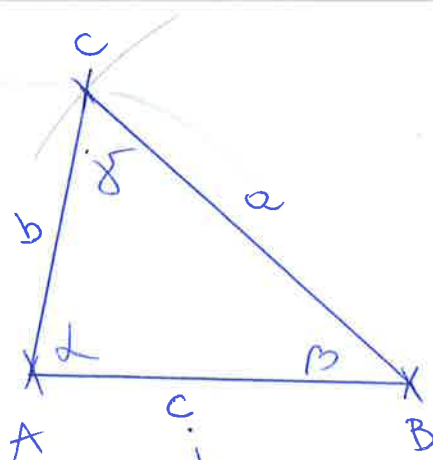
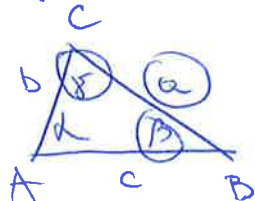
- $a = 4\text{cm}$
 $\beta = 70^\circ$
 $c = 3.5\text{cm}$



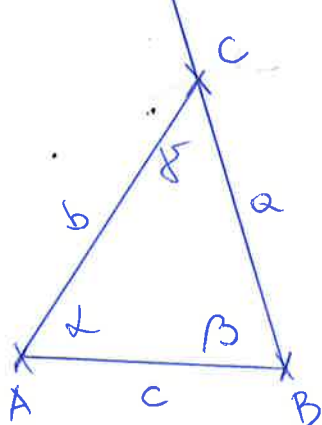
- $\alpha = 100^\circ$
 $a = 7\text{cm}$
 $c = 5\text{cm}$



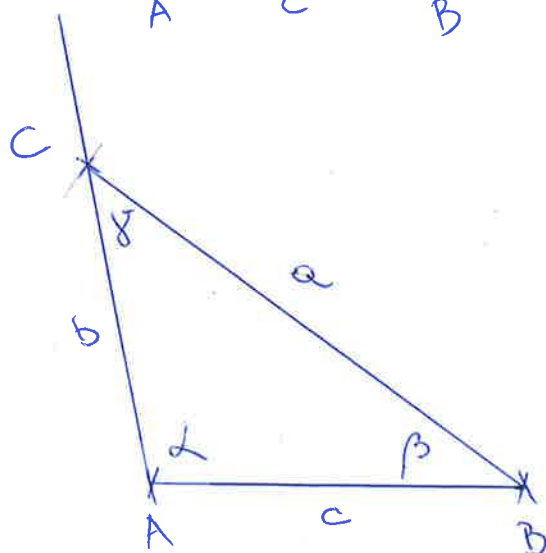
- $a = 6\text{cm}$
 $\beta = 65^\circ$
 $\gamma = 80^\circ$



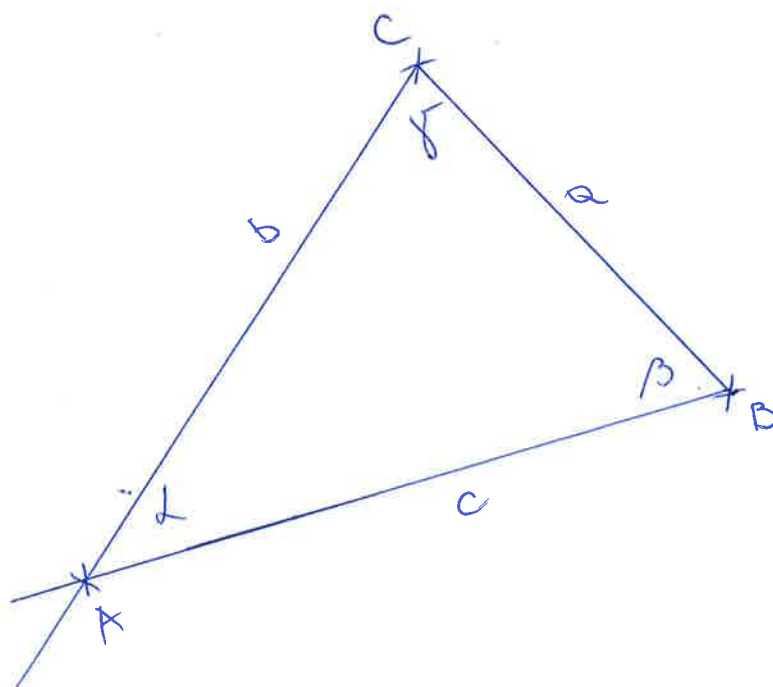
- potek
 1. c
 2. a
 3. b
 4. C



- potek
 1. c
 2. beta
 3. a
 4. C



- potek
 1. c
 2. alpha
 3. a
 4. C

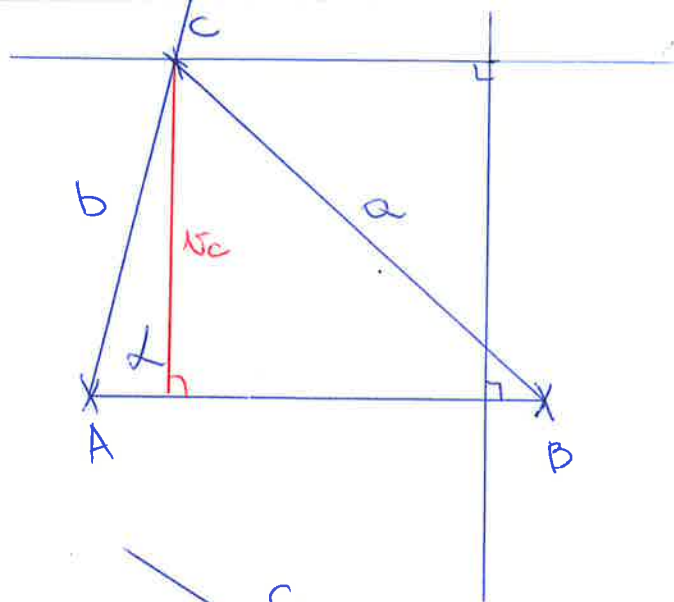
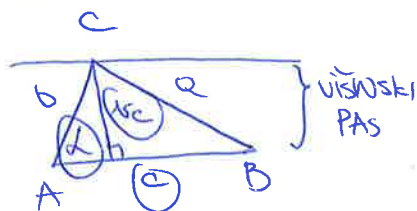


- potek
 1. a
 2. beta
 3. gamma
 4. A

$$\alpha = 75^\circ$$

$$c = 6 \text{ cm}$$

$$h_c = 4,5 \text{ cm}$$



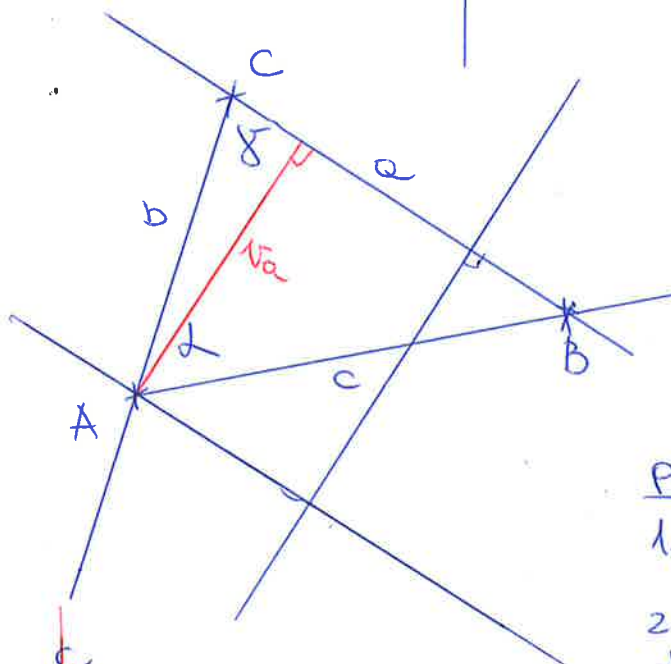
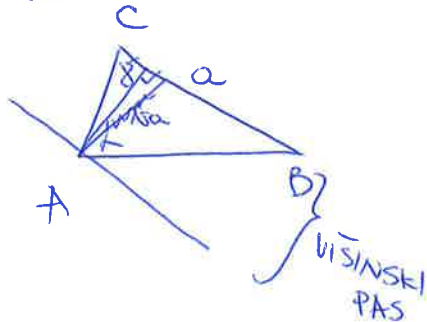
početak

1. c
2. α
3. h_c
4. C

$$\alpha = 60^\circ$$

$$\gamma = 75^\circ$$

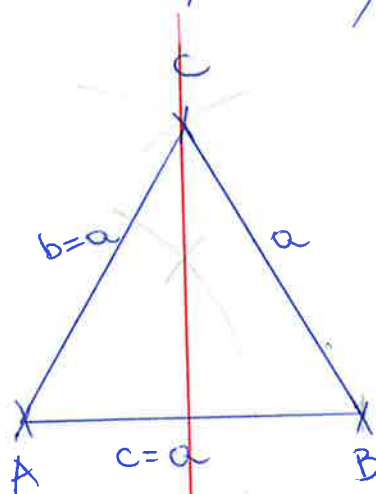
$$h_a = 4 \text{ cm}$$



početak

1. h_a - višinski pas
2. Izberemo točku C
3. γ
4. A
5. α
6. B

6. Enokostnevični $\triangle$
 $a = 4,5 \text{ cm}$

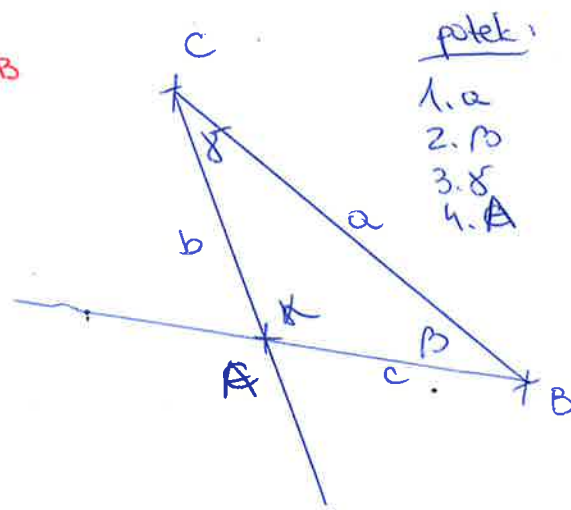


početak

1. $c = a$
2. a
3. $b = a$
4. C

7. $a = 6 \text{ cm}$
 $\beta = \gamma$
 $\alpha = 120^\circ$

$$\begin{aligned} \alpha + \beta + \gamma &= 180^\circ \\ \beta + \gamma &= 180^\circ - 120^\circ \\ \beta + \gamma &= 60^\circ \\ \beta &= \gamma = 30^\circ \end{aligned}$$



početak

1. a
2. β
3. γ
4. A

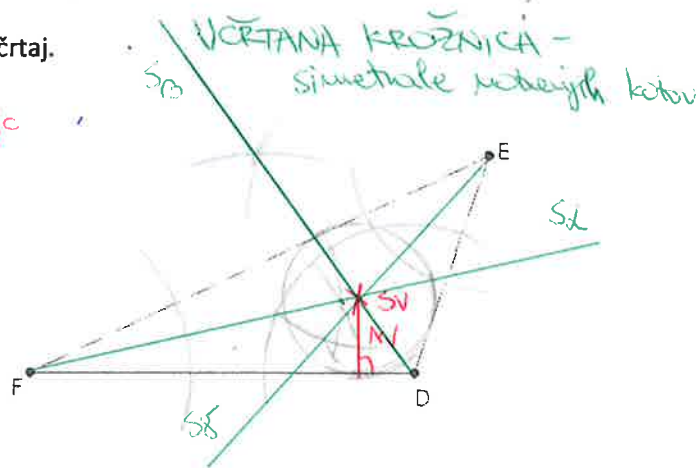
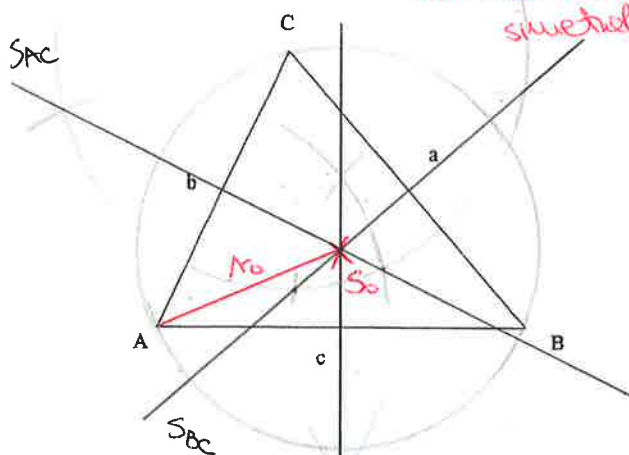
5. Načrtaj trikotnike s podatki:

$a = 6 \text{ cm}$	$a = 4 \text{ cm}$	$\alpha = 100^\circ$	$a = 6 \text{ cm}$	$\alpha = 75^\circ$	$\alpha = 60^\circ$
$b = 4 \text{ cm}$	$\beta = 70^\circ$	$a = 7 \text{ cm}$	$\beta = 65^\circ$	$c = 6 \text{ cm}$	$\gamma = 75^\circ$
$c = 5 \text{ cm}$	$c = 3,5 \text{ cm}$	$c = 5 \text{ cm}$	$\gamma = 80^\circ$	$v_c = 4,5 \text{ cm}$	$v_a = 4 \text{ cm}$

6. Nariši enakostranični trikotnik s stranico, dolgo 4,5 cm. S simetralo ga razdeli na dva enaka dela. Zapiši potek načrtovanja.

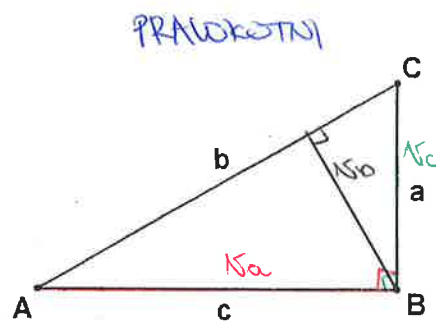
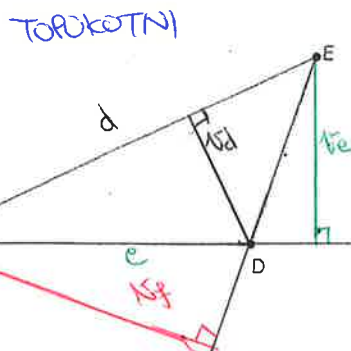
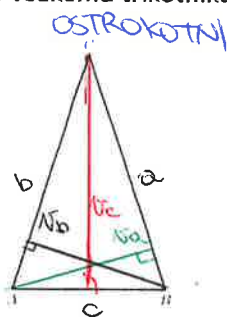
7. V trikotniku ABC sta kota ob stranici a, ki je dolga 6 cm, skladna, kot α pa meri 120° . Nariši trikotnik ABC.

8. Trikotniku ABC krožnico očrtaj, trikotniku DEF pa jo včrtaj.



9. Načrtaj trikotnik ABC s podatki $\alpha = 70^\circ$, $b = 5 \text{ cm}$, $c = 6 \text{ cm}$ in mu določi težišče.

10. Vsakemu trikotniku nariši vse višine in jih označi.



11. Nariši trikotnik ABC s podatki $\alpha = 70^\circ$, $b = 5 \text{ cm}$, $h_c = 5,5 \text{ cm}$.

12. Pojasni, ali obstaja trikotnik s stranicami 2 cm, 9 cm in 6 cm.

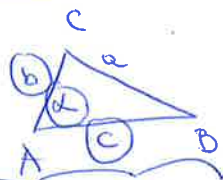
* 13. Nariši: a) $c = 5 \text{ cm}$
 $h_c = 3 \text{ cm}$
 $N_O = 4 \text{ cm}$

b) $a = 5 \text{ cm}$
 $\beta = 75^\circ$
 $N_O = 1,6 \text{ cm}$

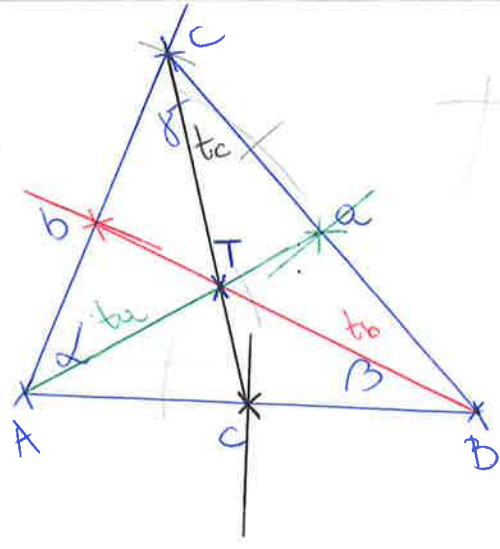
9. $\alpha = 70^\circ$
 $b = 5\text{cm}$
 $c = 6\text{cm}$

težišče

Skica:

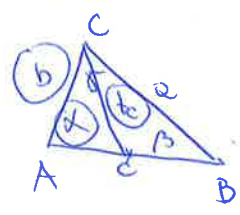


Težišče dobimo kot presečišče
 težiščnic t_a, t_b in t_c



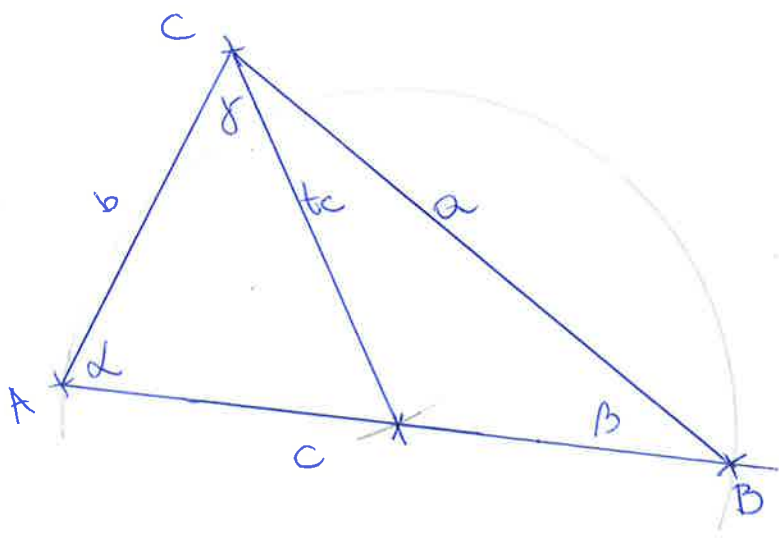
11. $\alpha = 70^\circ$
 $b = 5\text{cm}$
 $t_c = 5,5\text{cm}$

Skica:



redak:

1. b
2. α
3. t_c
4. B



12. $a = 2\text{cm}$
 $b = 8\text{cm}$
 $c = 6\text{cm}$

TRIkotniško PRAVILO
 $a + b > c$
 $a + c > b$
 $b + c > a$

$a + b > c$
 $2 + 8 > 6$
 $11 > 6 \checkmark$

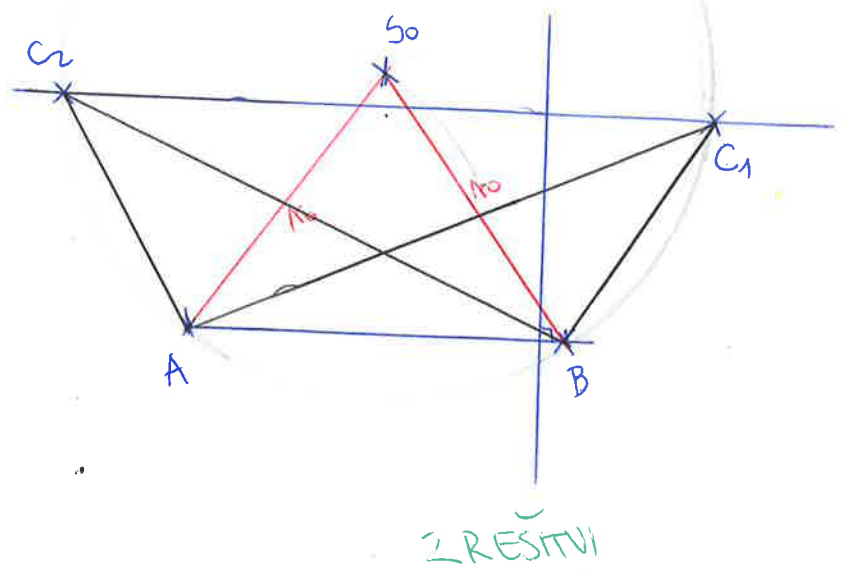
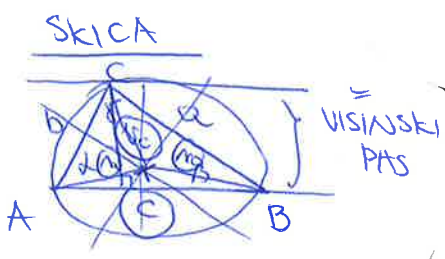
$a + c > b$
 $2 + 6 > 8$
 $8 \ngtr 8 \times$

$b + c > a$
 $8 + 6 > 2$
 $15 > 2 \checkmark$

O: Ne obstoja

13.

a) $c = 5 \text{ cm}$
 $r_c = 3 \text{ cm}$
 $r_o = 4 \text{ cm}$



b) $a = 5 \text{ cm}$
 $\gamma = 75^\circ$
 $r_v = 1,6 \text{ cm}$

