

2. PREIZKUS ZNANJA IZ MATEMATIKE

Ulomki, preslikave in trikotniki

OCENA	ODSTOTKI	ŠTEVILO TOČK
Neradosno (1)	0 do 49,9	0 - 26,5
Zadostno (2)	50,0 do 62,9	27 - 34
Dobro (3)	63,0 do 76,9	34,5 - 41,5
Prav dobro (4)	77,0 do 89,9	42 - 48,5
Odlično (5)	90,0 do 100	49 - 54

Ime in priimek: \_\_\_\_\_

Razred: 7. \_\_\_\_\_

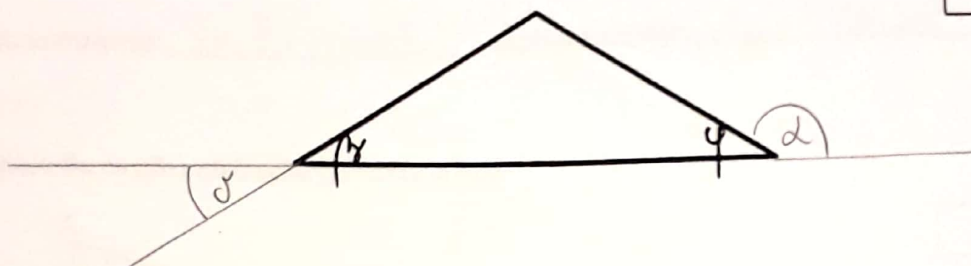
Datum: 14. 1. 2019

Št. doseženih točk: \_\_\_\_\_ / 54

OCENA: \_\_\_\_\_

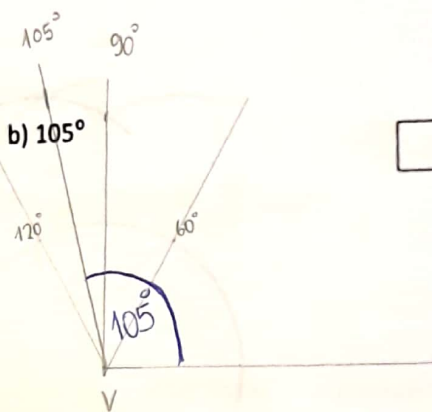
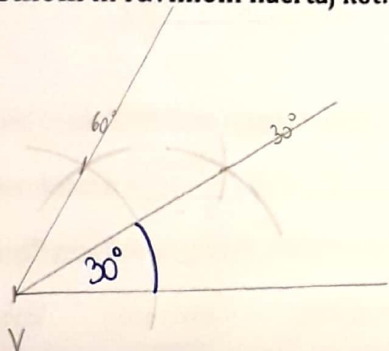
1. Kotu **beta** nariši **sovršni** kot **delta**, kotu **fi** pa nariši **sokot alfa**.

4



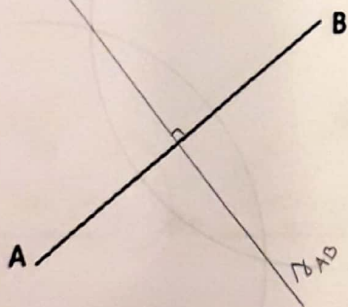
2. S šestilom in ravnilom načrtaj kot:

a)  $30^\circ$

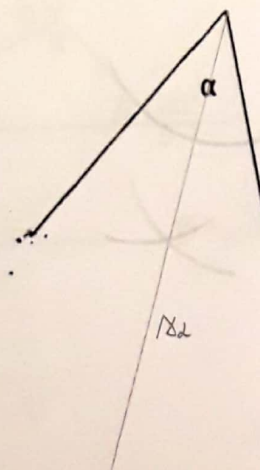


3

3. a) Nariši simetralo daljice AB.

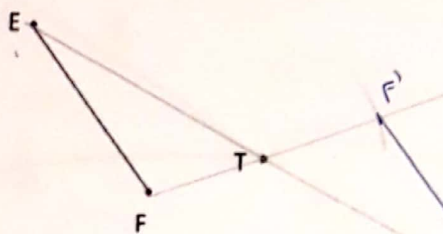


3. b) Nariši simetralo kota  $\alpha$ .

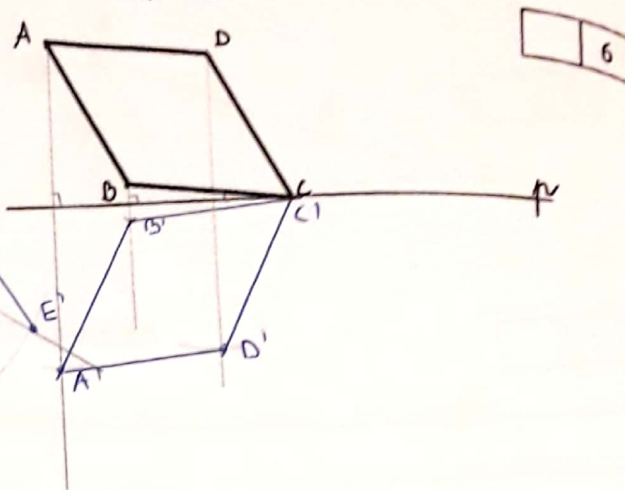


4

4. a) Prezrcali daljico EF čez točko T.



4. b) Prezrcali lik ABCD čez premico p.

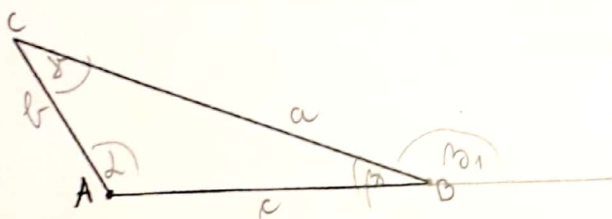


	6
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Zapis za zrcaljenje:  $Z_T: EF \rightarrow E'F'$

Zapis za zrcaljenje:  $Z_p: \square ABCD \rightarrow \square A'B'C'D'$

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



	8
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a) Izmeri in zapiši dolžine njegovih stranic.  $a = 5,8 \text{ cm}$ ,  $b = 2,4 \text{ cm}$ ,  $c = 4,5 \text{ cm}$

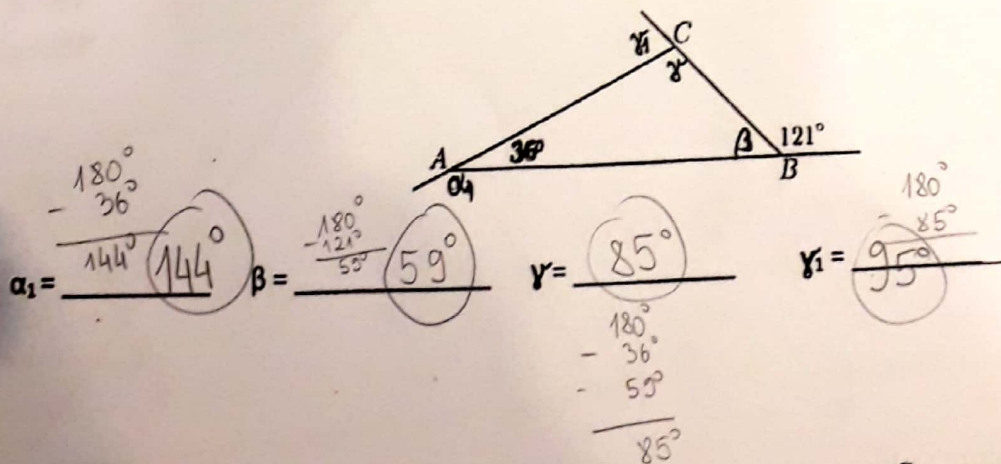
b) Izmeri kote:  $\alpha = 120^\circ$ ,  $\beta_1 = 160^\circ$ ,  $\gamma = 40^\circ$

c) Obkroži pravilne odgovore. Narisani trikotnik je:

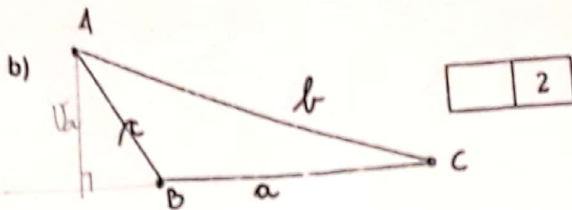
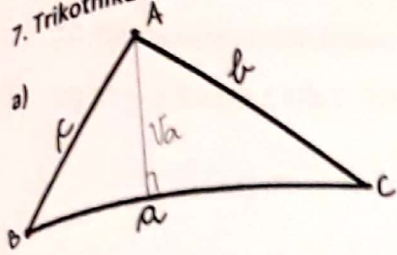
ostrokotni    topokotni    pravokotni    raznostranični    enakokraki    enakostranični

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

	4
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7. Trikotniku ABC načrtaj višino na stranico a.



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

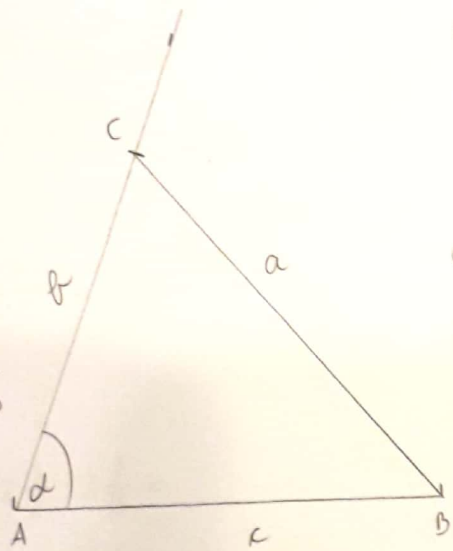
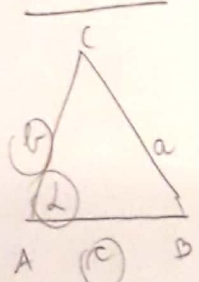
$$\begin{aligned} 2+9 &> 6 \\ 9+6 &> 2 \\ 2+6 &> 9 \end{aligned}$$

Trikotnik ne obstaja, saj vsota poljubnih dveh stranic ni večja od tretje stranice.

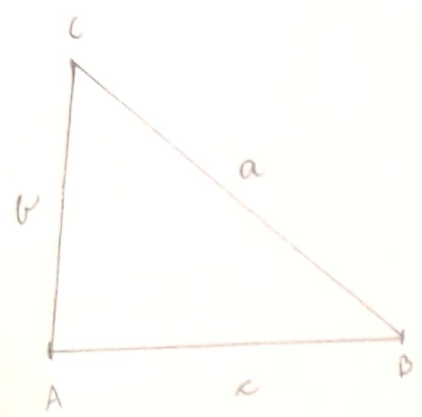
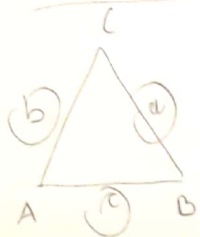
	1
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9. Nariši trikotnike s podatki:

a)  $\alpha = 70^\circ$   
 $b = 5 \text{ cm}$   
 $c = 6 \text{ cm}$

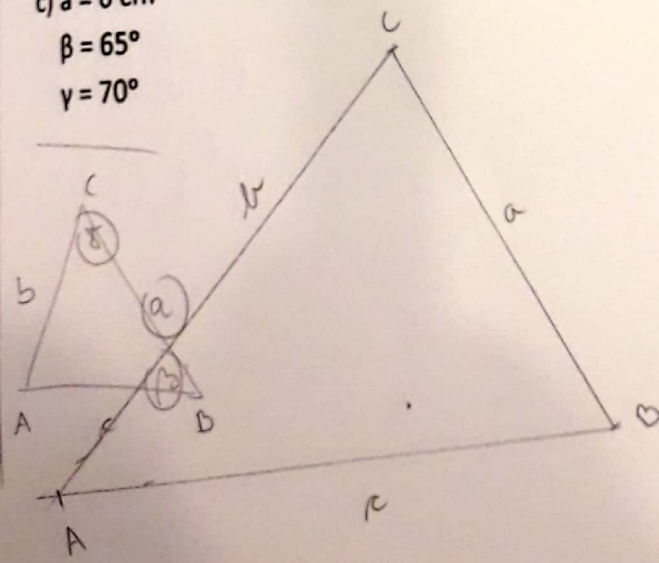


b)  $a = 6 \text{ cm}$   
 $b = 4 \text{ cm}$   
 $c = 5 \text{ cm}$

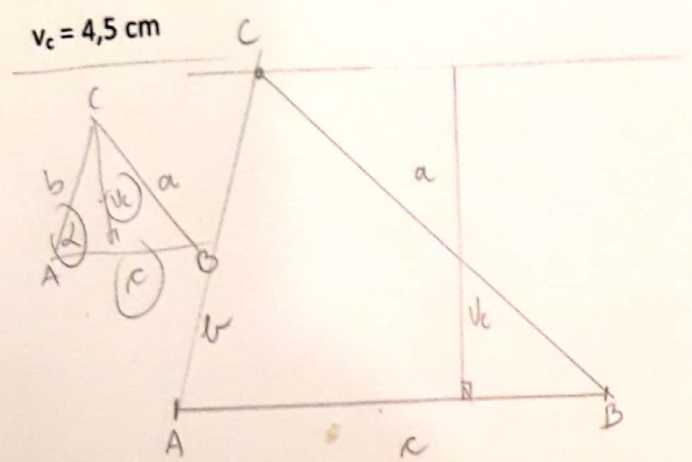


	12
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c)  $a = 6 \text{ cm}$   
 $\beta = 65^\circ$   
 $\gamma = 70^\circ$



č)  $\alpha = 75^\circ$   
 $c = 6 \text{ cm}$   
 $h_c = 4,5 \text{ cm}$





10. Izračunaj vrednosti izrazov.

$$\begin{aligned} \text{a) } & 21 - 5,5 : ((2,3 + 3,2 \cdot 1,5) - 1,6) = \\ & = 21 - 5,5 : ((2,3 + 4,8) - 1,6) = \\ & = 21 - 5,5 : (7,1 - 1,6) = \\ & = 21 - 5,5 : 5,5 = \\ & = 21 - 1 = \boxed{20} \end{aligned}$$

$$\begin{array}{r} 3,2 \cdot 1,5 \\ \hline 32 \\ 150 \\ \hline 48 \end{array}$$

	10
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$$\begin{aligned} \text{b) } & 5,4 + 2 \frac{1}{3} \cdot 3 - 2,5 = \\ & = 5 \frac{4}{10} + \frac{7}{3} \cdot \frac{3}{1} - 2 \frac{5}{10} = \\ & = 5 \frac{4}{10} + 7 - 2 \frac{5}{10} = \\ & = 5,4 + 7 - 2,5 = \\ & = \boxed{9,9} \end{aligned}$$

$$\begin{array}{r} 5,4 \\ + 7 \\ \hline 12,4 \\ - 2,5 \\ \hline 9,9 \end{array}$$

$$\begin{aligned} \text{c) } & 16,8 - 12 \frac{1}{2} : 3 \frac{1}{8} = \\ & = 16 \frac{8}{10} - \frac{25}{2} : \frac{25}{8} = \\ & = 16 \frac{8}{10} - \frac{25}{2} \cdot \frac{8}{25} = \\ & = 16 \frac{8}{10} - 4 = \\ & = \boxed{12,8} \end{aligned}$$

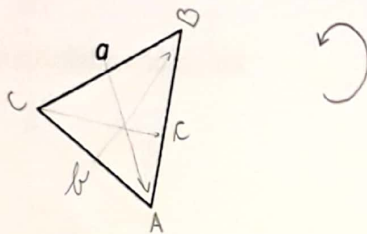
## 4. preizkus znanja – trikotniki

Ime in priimek: \_\_\_\_\_ Razred: \_\_\_\_\_ Datum: \_\_\_\_\_

Točke: \_\_\_\_\_ Ocena: \_\_\_\_\_

0 - 23,5 = nzd (1); 24 - 29,5 = zd (2); 30 - 36,5 = db (3); 37 - 42,5 = pdb (4); 43 - 48 = odl (5)

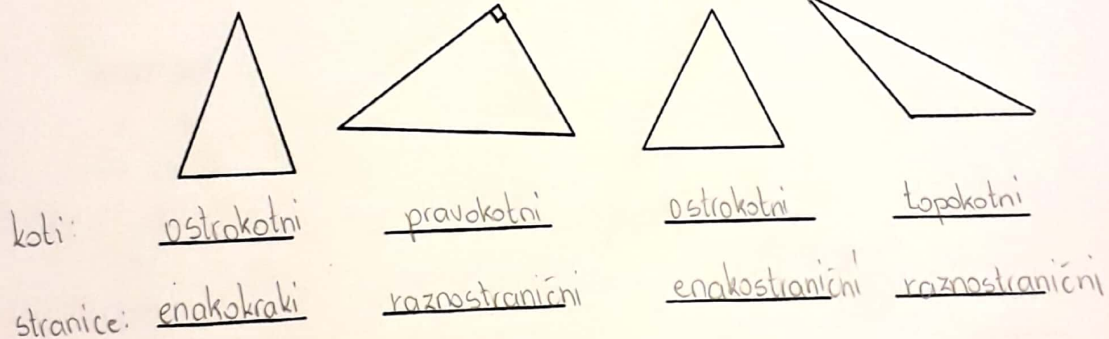
1. Trikotniku ABC pravilno označi oglišča in stranice.



2 T

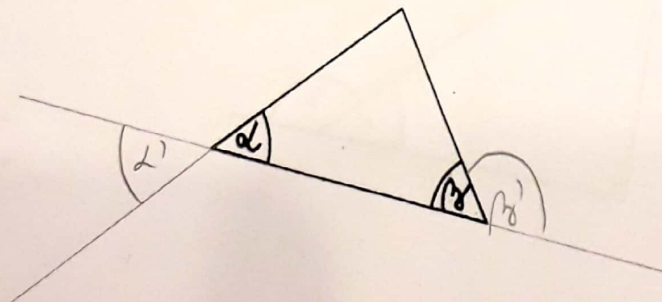
2. Trikotnike na sliki poimenuj glede na velikost kotov in glede na dolžine stranic.

4 T



3. Kotu  $\alpha$  nariši sovršni kot, kotu  $\beta$  pa sokot.

2 T



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4. Zapiši črko P pred pravilno izjavo in črko N pred napačno. Napačno izjavo ustrezno popravi.

P V enakokrakem trikotniku sta kota ob osnovnici skladna. 6T

P V pravokotnem trikotniku je en notranji kot pravi (meri  $90^\circ$ ), druga dva pa sta ostrata.

N Stranico v trikotniku, ki leži nasproti pravemu kotu, imenujemo kateta. *hipotenuza*

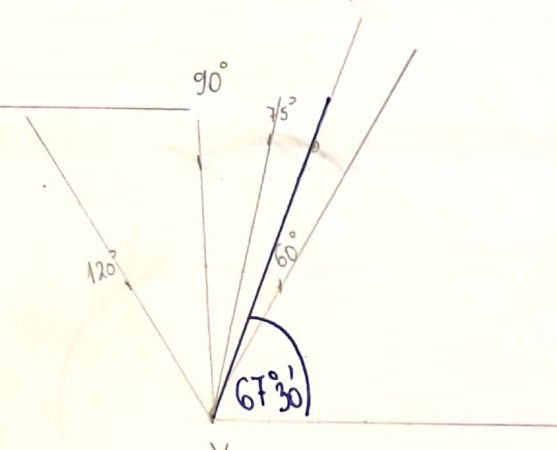
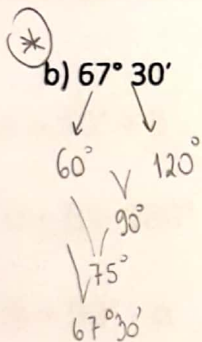
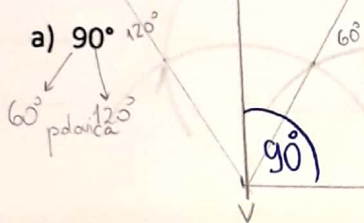
N Trikotnik s stranicami, ki merijo 3 cm, 4 cm in 8 cm, je mogoče narisati.  $\rightarrow$  *3+4 > 8* *pravilo neenakosti*

N Daljice, ki omejujejo trikotnik, imenujemo poltraki. *stranice*

P Lik je pozitivno orientiran, če si njegova oglišča sledijo v nasprotni smeri vrtenja urinega kazalca.

5. S šestilom in ravnilom načrtaj kot:

5T



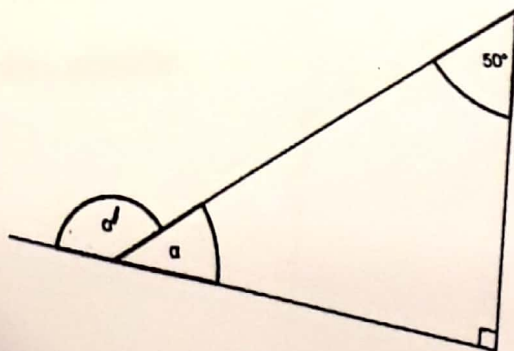
6. Izračunaj velikosti neznanih kotov.

9T

a)

$$\alpha = 40^\circ$$

$$\alpha' = 140^\circ$$



$$\alpha = 180^\circ - 50^\circ - 90^\circ$$

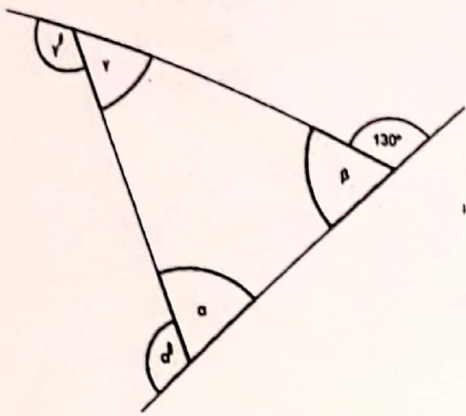
$$\alpha = 40^\circ$$

$$\alpha' = 180^\circ - 40^\circ$$

$$\alpha' = 140^\circ$$



b) Enakokraki trikotnik

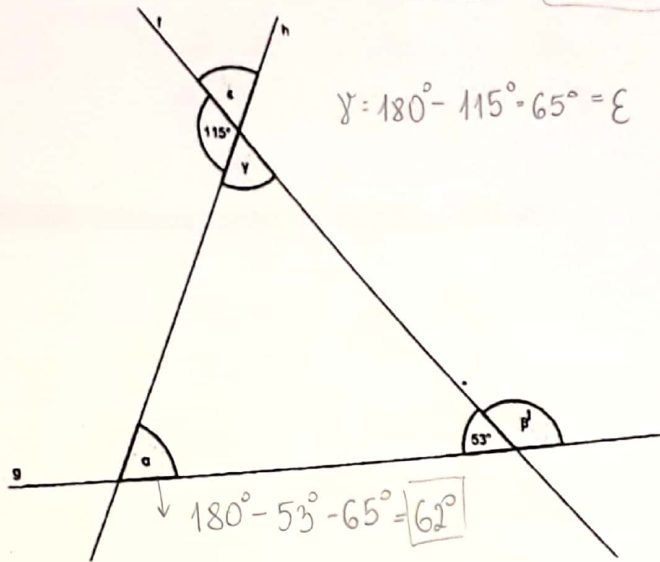


$\alpha = 50^\circ$  } ker je enakokraki  
 $\beta = 50^\circ$  }  $180^\circ - 130^\circ = 50^\circ$   
 $\gamma = 80^\circ$  }  $180^\circ - 50^\circ - 50^\circ = 80^\circ$   
 $\gamma' = 100^\circ$  }  $180^\circ - 80^\circ = 100^\circ$

$\gamma = 180^\circ - 115^\circ - 65^\circ = \epsilon$

c)

$\alpha = 62^\circ$   
 $\beta' = 127^\circ$   
 $\epsilon = 65^\circ$



$\beta' = 180^\circ - 53^\circ = 127^\circ$

$180^\circ - 53^\circ - 65^\circ = 62^\circ$

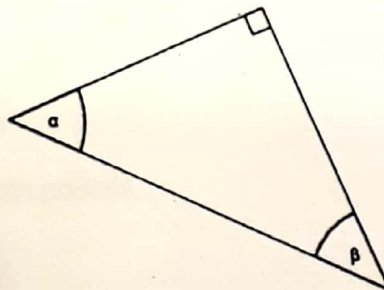
7. Dan je pravokotni trikotnik ABC. Katera izmed spodnjih enačb je pravilna?

1 T

a)  $\alpha = 90^\circ + \beta$

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

c)  $\beta = 90^\circ - \alpha$



$\alpha + \beta + \gamma = 180^\circ$   
 $\alpha + \beta + 90^\circ = 180^\circ$

$\alpha + \beta = 90^\circ$

$\beta = 90^\circ - \alpha$

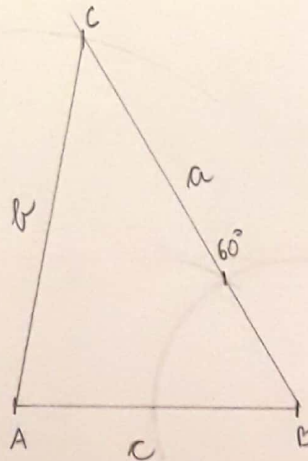
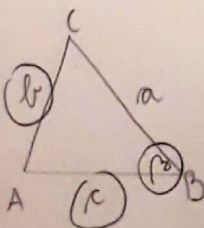
8. Načrtaj trikotnik ABC z danimi podatki.

4 T

$b = 5 \text{ cm}$

$c = 4 \text{ cm}$

$\beta = 60^\circ$  - s šestilom

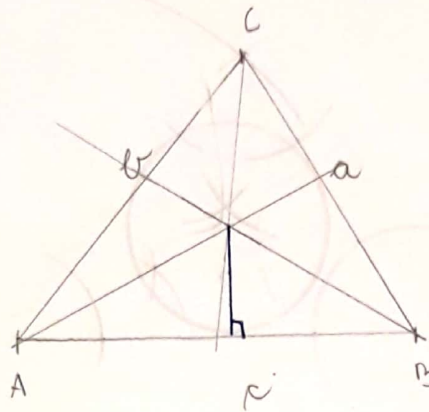
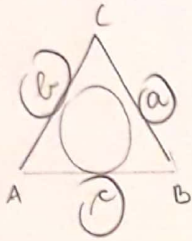


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9. Načrtaj trikotnik ABC z danimi podatki in mu včrtaj krožnico.

5T

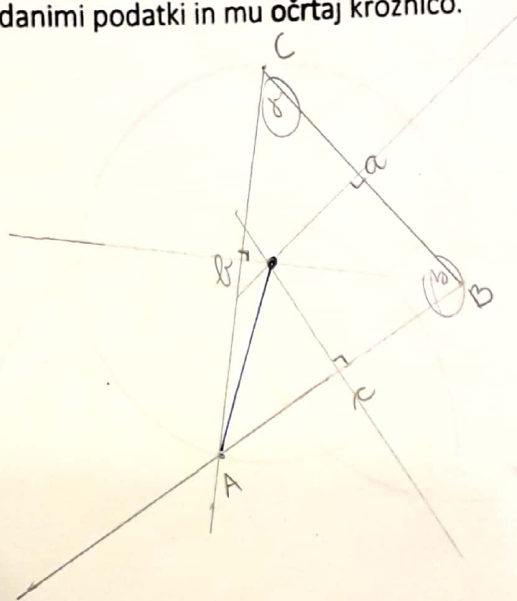
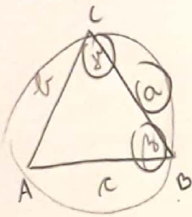
$a = 4,5 \text{ cm}$   
 $b = 5 \text{ cm}$   
 $c = 5,5 \text{ cm}$



10. Načrtaj trikotnik ABC z danimi podatki in mu očrtaj krožnico.

5T

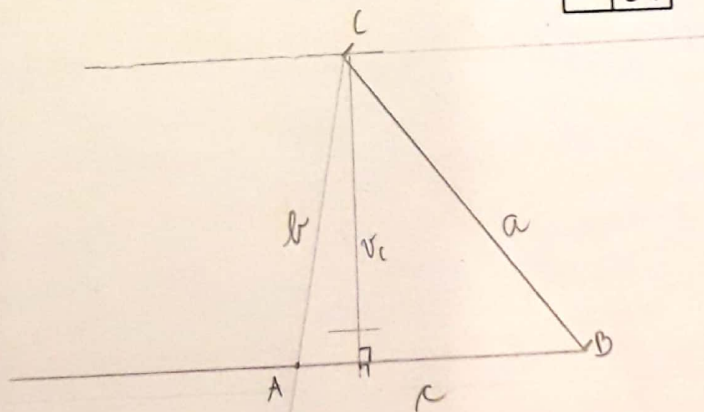
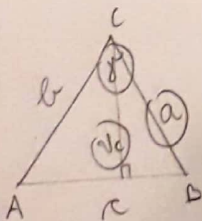
$a = 4 \text{ cm}$   
 $\beta = 80^\circ$   
 $\gamma = 50^\circ$



11. Načrtaj trikotnik ABC z danimi podatki.

5T

$a = 5 \text{ cm}$   
 $\gamma = 50^\circ$   
 $v_c = 4 \text{ cm}$





### 3. PREIZKUS ZNANJA IZ MATEMATIKE - Ulomki in načrtovanje trikotnikov



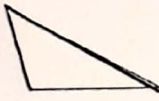
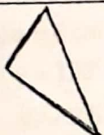
Ime in priimek: \_\_\_\_\_  
 Razred: 7. \_\_\_ Datum: \_\_\_\_\_ Št. doseženih točk: \_\_\_ / 67 OCENA: \_\_\_\_\_

nzd (1) - 0 - 33 zd (2) - 33,5 - 42 db (3) - 42,5 - 51,5 pdb (4) - 52 - 60 odl (5) - 60,5 - 67

#### 1. naloga

Dopolni preglednico.

/8

TRIKOTNIK	VRSTA GLEDE NA DOLŽINO STRANIC	VRSTA GLEDE NA VELIKOST KOTOV
	enakostranični	ostrokotni
	enakokraki	ostrokotni
	raznostranični	topokotni
	raznostranični	pravokotni

#### 2. naloga

Zapiši P, če je izjava pravilna in N, če izjava ni pravilna.

a) Ulomke množimo tako, da jih damo na skupni imenovalce, nato množimo le števce, imenovalce pa prepisemo. N

b) Ulomek je okrajšan le takrat, če sta števec in imenovalce praštevil. N  $\frac{6}{7}$   $\frac{6}{7}$  ni praštevilb

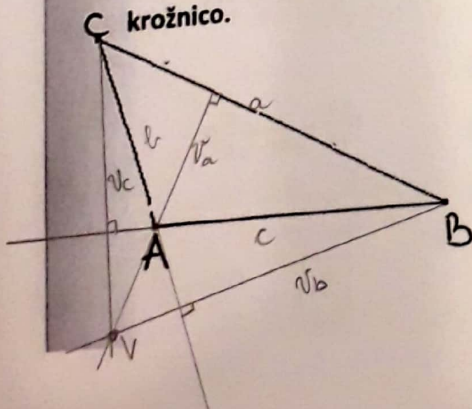
c) Med ulomkoma z enakima imenovalcema je večji tisti, ki ima večji števec. P

č) Ulomke z enakimi imenovalci seštejemo tako, da imenovalce prepisemo, števce pa seštejemo. P

/4

#### 3. naloga

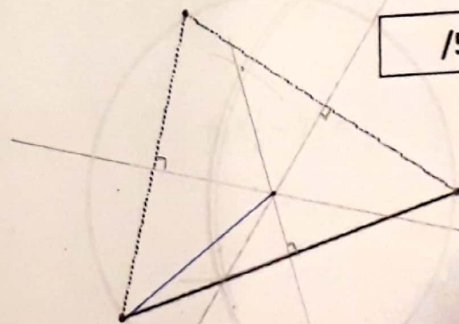
Prvemu trikotniku nariši in izmeri vse tri višine ter določi višinsko točko. Drugemu pa očrtaj krožnico.



$$v_a = 1,9 \text{ cm}$$

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

$$v_c = 2,4 \text{ cm}$$



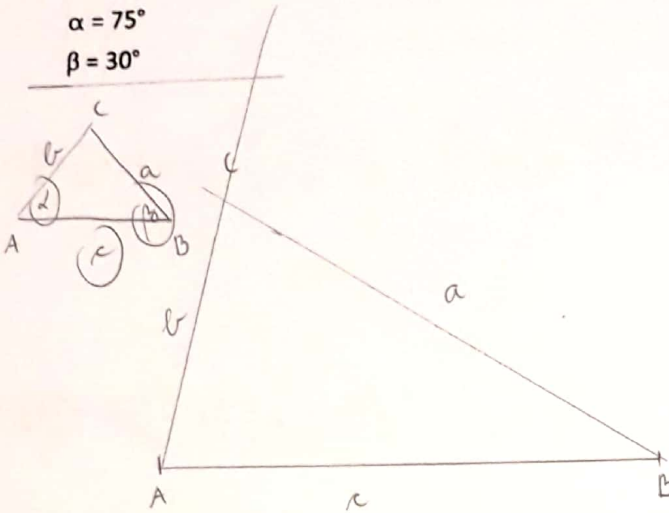
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**4. naloga**

Načrtaj trikotnik ABC s podatki:

- a)  $c = 7 \text{ cm}$   
 $\alpha = 75^\circ$   
 $\beta = 30^\circ$

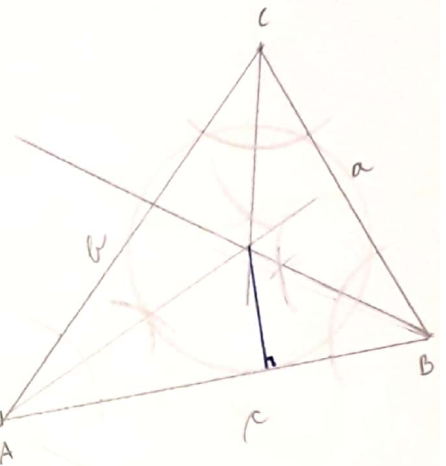
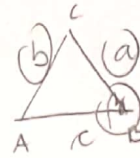


- b)  $\beta = 70^\circ$

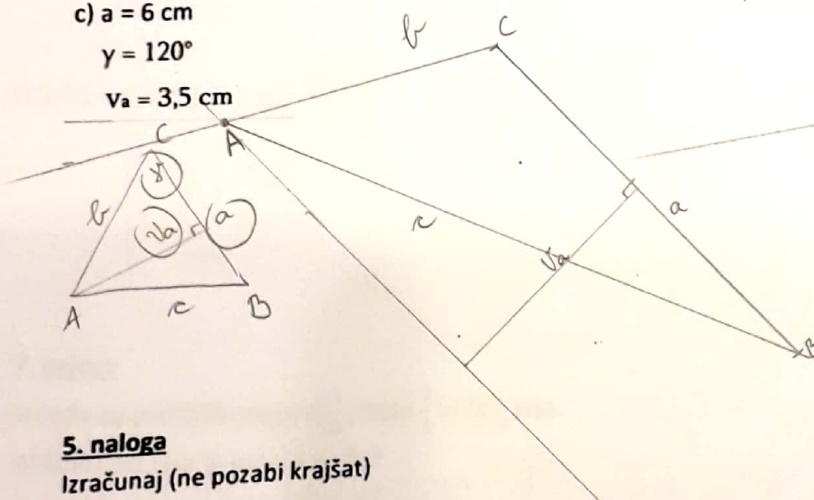
- $a = 4,5 \text{ cm}$   
 $b = 62 \text{ mm}$

/9

včrtaj mu krožnico



- c)  $a = 6 \text{ cm}$   
 $\gamma = 120^\circ$   
 $v_a = 3,5 \text{ cm}$



**5. naloga**

Izračunaj (ne pozabi krajšati)

/13

a)  $\frac{3}{8} + 3\frac{1}{8} = 3\frac{4}{8} = 3\frac{1}{2}$

b)  $\frac{3}{4} \cdot \frac{5}{10} = \frac{15}{40} = \frac{3}{8}$

c)  $3\frac{2}{3} - 1\frac{4}{9} = 3\frac{6}{9} - 1\frac{4}{9} = 2\frac{2}{9}$

č)  $\frac{6}{7} \cdot \frac{3}{5} = \frac{18}{35}$

d)  $2\frac{4}{7} : 9 = \frac{18}{7} \cdot \frac{1}{9} = \frac{2}{7}$

e)  $5\frac{2}{5} : 1\frac{1}{5} = \frac{27}{5} : \frac{6}{5} = \frac{27}{5} \cdot \frac{5}{6} = \frac{27}{6} = \frac{9}{2} = 4\frac{1}{2}$

f)  $\frac{3}{4} + \frac{7}{10} - \frac{1}{5} = \frac{15}{20} + \frac{14}{20} - \frac{4}{20} = \frac{25}{20} = 1\frac{1}{4}$

g)  $4\frac{1}{5} \cdot 1\frac{5}{7} = \frac{21}{5} \cdot \frac{12}{7} = \frac{36}{5} = 7\frac{1}{5}$

h)  $5\frac{1}{6} - 2\frac{4}{3} = \frac{31}{6} - \frac{16}{3} = \frac{31}{6} - \frac{32}{6} = -\frac{1}{6}$

### 6. naloga

Izračunaj.

$$a) \left(\frac{2}{5} + \frac{1}{4}\right) : 9 \frac{1}{10} = \left(\frac{8}{20} + \frac{5}{20}\right) : \frac{91}{10} = \frac{13}{20} \cdot \frac{10}{91} = \frac{1}{14}$$

/10

$$b) \frac{4}{7} \cdot 2 \frac{5}{8} + \frac{7}{12} : 2 \frac{1}{3} = \frac{4}{7} \cdot \frac{21}{8} + \frac{7}{12} : \frac{7}{3} = \frac{3}{2} + \left(\frac{7}{12} \cdot \frac{3}{7}\right) = \frac{3 \cdot 2}{2 \cdot 2} + \frac{1}{4} = \frac{7}{4} = 1 \frac{3}{4}$$

$$c) 6 \cdot \left(4 \frac{5}{9} - 2 \frac{1}{2}\right) - 1 \frac{1}{4} : \frac{5}{6} = 6 \cdot \left(4 \frac{10}{18} - 2 \frac{9}{18}\right) - \frac{5}{4} \cdot \frac{6}{5} = 6 \cdot 2 \frac{1}{18} - \frac{3}{2} =$$
$$= 6 \cdot \frac{37}{18} - \frac{3}{2} = \frac{37 \cdot 2}{3 \cdot 2} - \frac{3 \cdot 3}{2 \cdot 3} = \frac{74}{6} - \frac{9}{6} = \frac{65}{6} = 10 \frac{5}{6}$$

$$č) 3,25 \cdot 4 - 12 \frac{1}{3} : 2 = \frac{325}{100} \cdot \frac{4}{1} - \frac{37}{3} : \frac{2}{1} = \frac{325}{25} - \frac{37}{3} \cdot \frac{1}{2} = 13 - \frac{37}{6} = 13 - 6 \frac{1}{6} =$$
$$= 6 \frac{5}{6}$$

### 7. naloga

Iz soda so pretočili najprej  $\frac{1}{3}$ , nato  $\frac{2}{5}$  in še  $\frac{1}{6}$  kisa.

a) Koliki del kisa je ostal v sodu?

$$1 - \left(\frac{1}{3} + \frac{2}{5} + \frac{1}{6}\right) = 1 - \left(\frac{10}{30} + \frac{12}{30} + \frac{5}{30}\right) = 1 - \frac{27}{30} = \frac{30}{30} - \frac{27}{30} =$$
$$= \frac{3}{30} = \frac{1}{10}$$

/4

V sodu je še  $\frac{1}{10}$  kisa.

b) Koliko litrov kisa je bilo v sodu na začetku, če je na koncu v njem ostalo 3 hl kisa?

del kisa

$$\frac{1}{10}$$

$$3 \text{ hl} = 300 \text{ l}$$

$$\frac{1}{10} \text{ od } X = 300 \text{ l}$$
$$X = \frac{300}{1} : \frac{1}{10}$$

$$X = \frac{300}{1} \cdot \frac{10}{1}$$

$$X = 3000 \text{ l}$$

Na začetku je bilo v sodu 30 hl kisa  
oz. 3000 l.

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### 8. naloga

Od koluta, na katerem je 25 metrov kabla, so odrezali 5 kosov po  $2\frac{3}{5}$  metra. Ostanek kabla so razdelili na 3 enake dele. Koliko meri en tak del kabla?

/3

$$5 \cdot 2\frac{3}{5} = 5 \cdot \frac{13}{5} = 13 \text{ metrov}$$

$$\begin{array}{r} 25 \\ - 13 \\ \hline 12 \end{array} \text{ m še ostalo : } 3 = 4 \text{ m}$$

En preostali del meri 4 m.

### 9. naloga

Zapiši izraz in izračunaj njegovo vrednost.

/4

Izračunaj količnik vsote in razlike števil  $3\frac{1}{2}$  in  $1\frac{2}{5}$ .

$$\begin{aligned} \left(3\frac{1}{2} + 1\frac{2}{5}\right) \cdot \left(3\frac{1}{2} - 1\frac{2}{5}\right) &= \left(3\frac{5}{10} + 1\frac{4}{10}\right) \cdot \left(3\frac{5}{10} - 1\frac{4}{10}\right) \\ &= 4\frac{9}{10} : 2\frac{1}{10} = \frac{49}{10} \cdot \frac{10}{2} = \frac{49}{2} = 24\frac{1}{2} \end{aligned}$$

### 10. naloga

Izračunaj vrednost izraza  $\frac{3}{4} \cdot a \cdot b + b : c$ , če poznaš vrednosti spremenljivk a, b in c.

$$a = 1\frac{1}{3} \quad b = 2\frac{2}{5} \quad c = 4,8$$

/3

$$\begin{aligned} \frac{3}{4} \cdot 1\frac{1}{3} \cdot 2\frac{2}{5} + 2\frac{2}{5} : 4,8 &= \frac{3}{4} \cdot \frac{4}{3} \cdot \frac{12}{5} + \frac{12}{5} : \frac{48}{10} = \frac{12}{5} + \frac{12}{5} \cdot \frac{10}{48} \\ &= \frac{12}{5} + \frac{1}{2} = 2\frac{2}{5} + \frac{1}{2} = 2\frac{4}{10} + \frac{5}{10} = 2\frac{9}{10} \quad \text{ali} \quad 2,9 \end{aligned}$$

### 11. naloga

Reši enačbi

a)  $x - \frac{1}{3} = 2\frac{2}{3}$

$$x = 2\frac{2}{3} + \frac{1}{3}$$

$$x = 3$$

b)  $12,8 : x = 8$

$$x = 12,8 : 8$$

$$x = 1,6$$

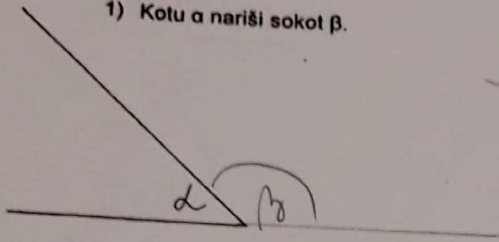
$$\begin{array}{r} 12,8 : 8 = 1,6 \\ 4,8 \\ \hline 0 \end{array}$$

/4

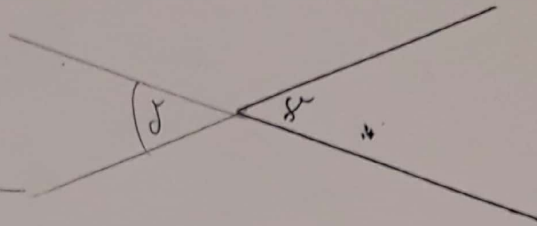
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PISNO PREVERJANJE ZNANJA-TRIKOTNIKI

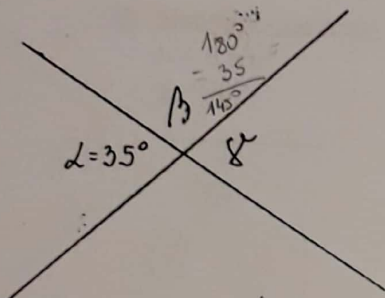
1) Kotu  $\alpha$  nariši sokot  $\beta$ .



Kotu  $\gamma$  nariši sovráni kot  $\delta$ .

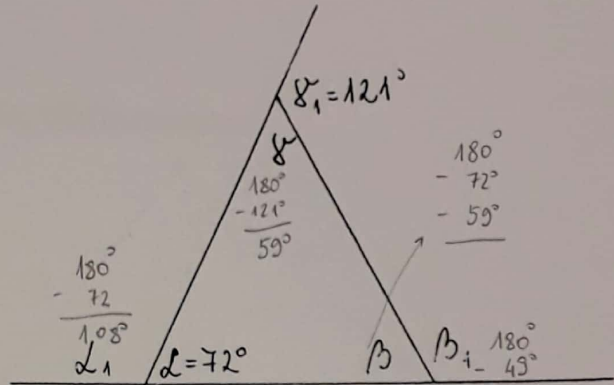


2) Izračunaj neznane kote:



$$\beta = 145^\circ$$

$$\gamma = 35^\circ = \alpha$$



$$\alpha_1 = 108^\circ$$

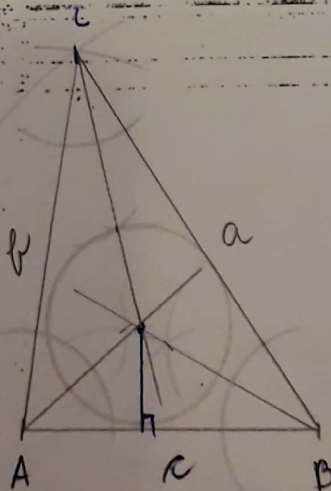
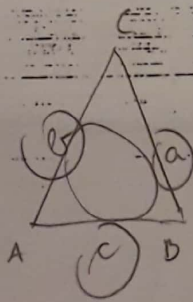
$$\beta = 49^\circ$$

$$\beta_1 = 131^\circ$$

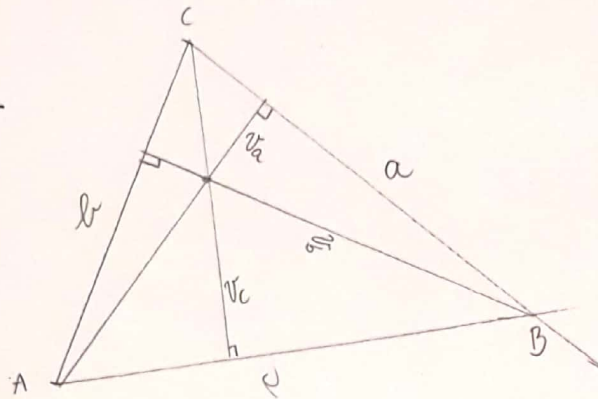
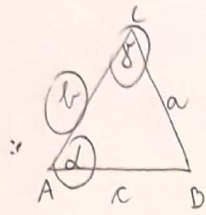
$$\gamma = 59^\circ$$

3) Načrtaj trikotnik ABC in mu VČRTAJ krožnico:

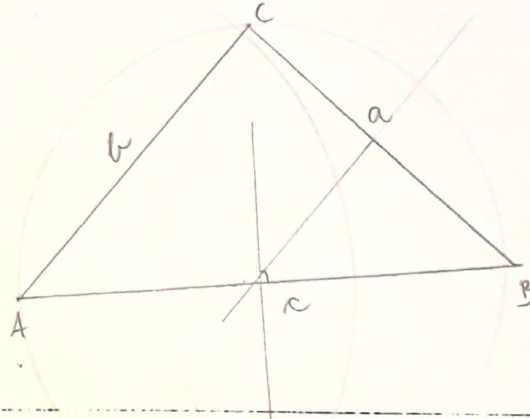
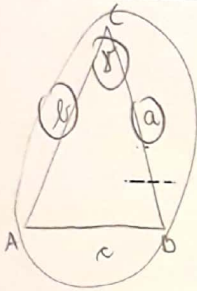
- a = 6 cm
- b = 5 cm
- c = 4 cm



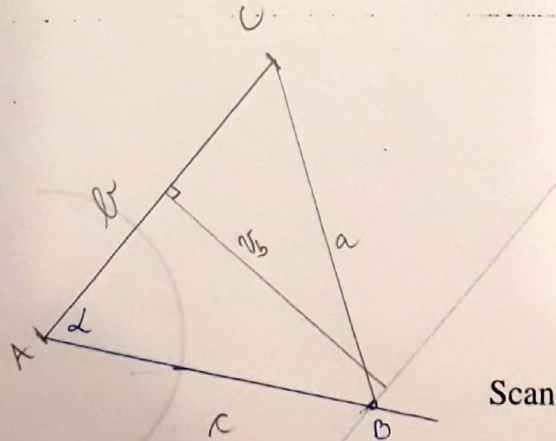
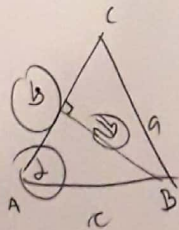
- 4) Načrtaj trikotnik ABC in mu vpiši vse tri višine:  
 $b = 5 \text{ cm}$   
 $\alpha = 60^\circ$   
 $\gamma = 75^\circ$



- 5) Načrtaj enakokraki trikotnik ABC in mu OČRTAJ krožnico:  
 $b = 5 \text{ cm}$   
 $\gamma = 90^\circ$



- 6) Načrtaj trikotnik ABC:  
 $b = 5 \text{ cm}$   
 $v_b = 4 \text{ cm}$   
 $\alpha = 60^\circ$  - s sestilom



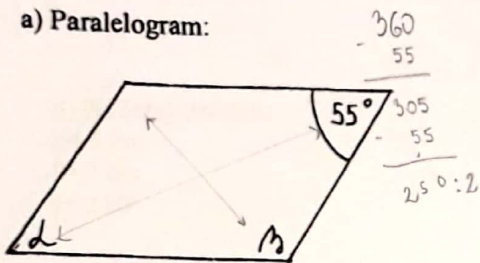
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# PREVERJANJE ZNANJA- ŠTIRIKOTNIKI

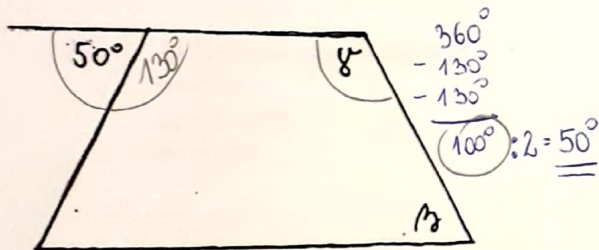
1) Določi velikost označenih kotov v liku:

a) Paralelogram:



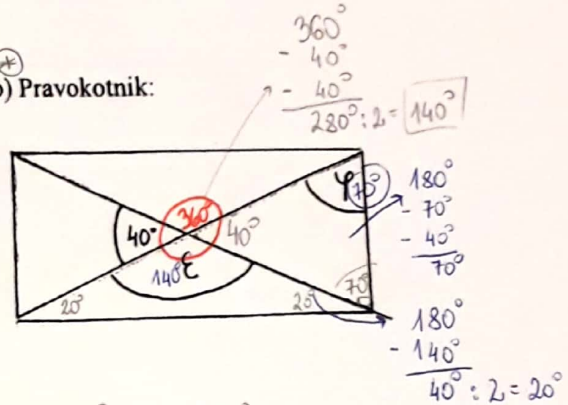
$\alpha = 55^\circ \quad \beta = 125^\circ$

c) Enakokraki trapez:



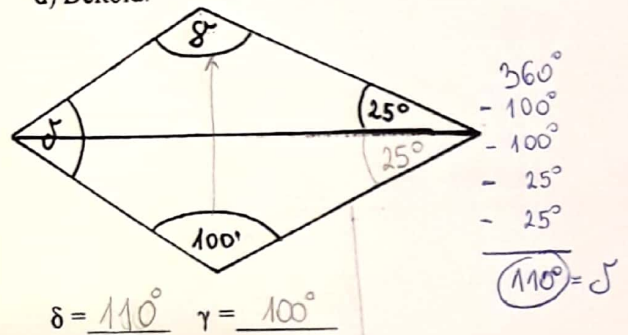
$\gamma = 130^\circ \quad \beta = 50^\circ$

b) Pravokotnik:



$\epsilon = 140^\circ \quad \phi = 70^\circ$

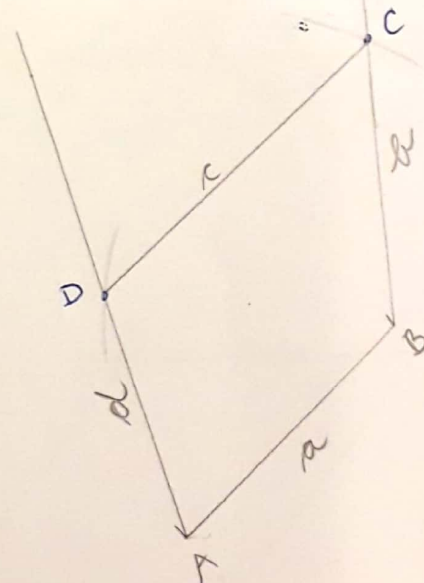
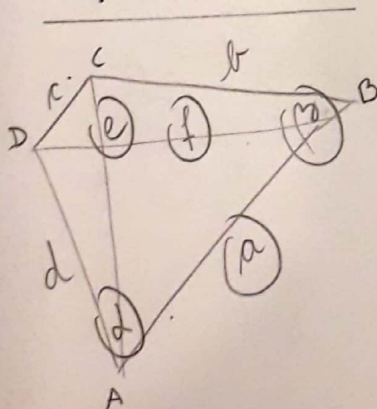
d) Deltoid:



$\delta = 110^\circ \quad \gamma = 100^\circ$

2) Načrtaj štirikotnik:

- a = 4 cm
- e = 7 cm
- f = 4 cm
- $\alpha = 65^\circ$
- $\beta = 130^\circ$



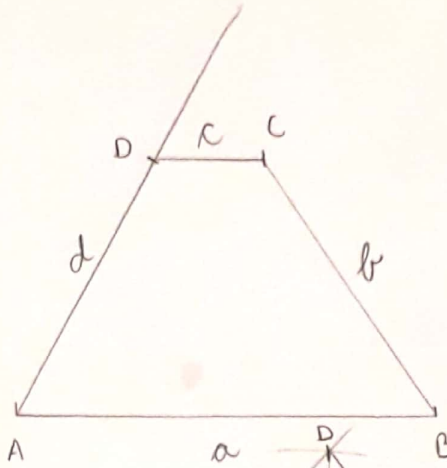
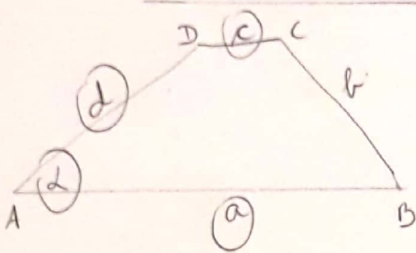
4) Načrtaj trapez:

$a = 6 \text{ cm}$

$d = 4 \text{ cm}$

$c = 1,5 \text{ cm}$

$\alpha = 60^\circ$

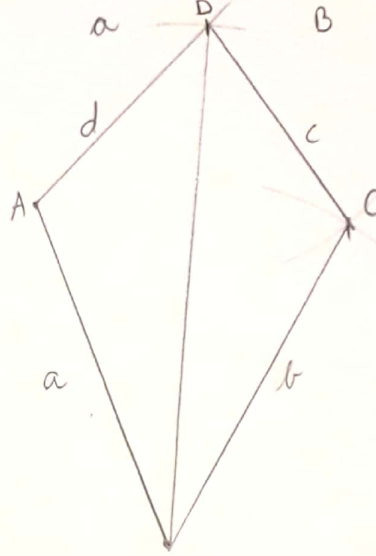


5) Načrtaj deltoid:

$b = 5 \text{ cm}$

$f = 7 \text{ cm}$

$\gamma = 110^\circ$

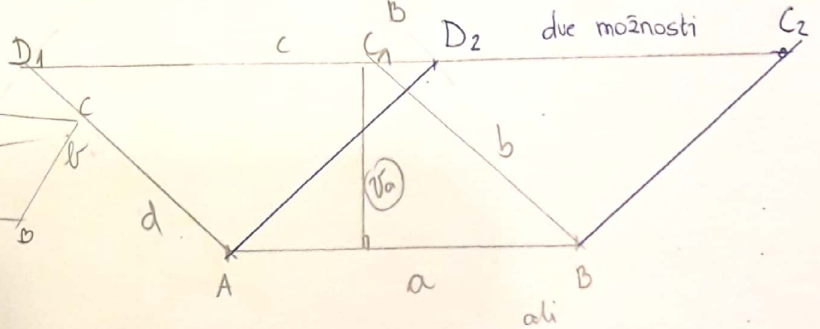
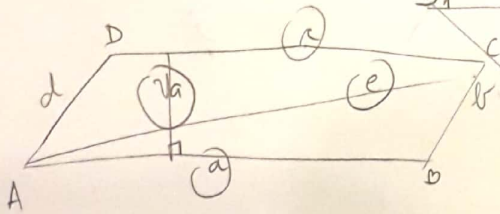


6) Načrtaj paralelogram

$a = 5 \text{ cm}$

$v_a = 2,5 \text{ cm}$

$e = 4 \text{ cm}$



7) Načrtaj romb:

$a = 4 \text{ cm}$

$\alpha = 50^\circ$

