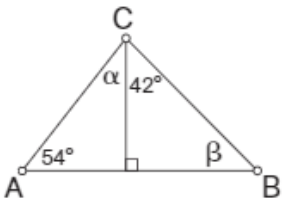
REŠITVE - SDZ (3.del), str. 120

10. Izračunaj velikosti označenih kotov trikotnika ABC.

a)



Trikotnik razdelimo na dva dela in v vsakem od njiju je vsota notranjih kotov 180°.

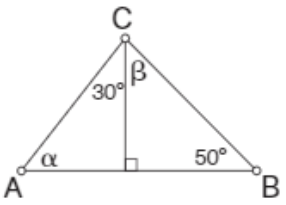
$54° + 90° + \alpha = 180° \rightarrow \alpha = 180° - 90° - 54°$

$\boldsymbol{\alpha = 36°}$

$42° + 90° + \beta = 180° \rightarrow \beta = 180° - 90° - 42°$

$\boldsymbol{\beta = 48°}$

b)



Trikotnik razdelimo na dva dela in v vsakem od njiju je vsota notranjih kotov 180°.

$30° + 90° + \alpha = 180° \rightarrow \alpha = 180° - 90° - 30°$

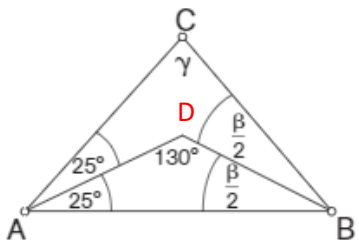
$\boldsymbol{\alpha = 60°}$

$50° + 90° + \beta = 180° \rightarrow \beta = 180° - 90° - 50°$

$\boldsymbol{\beta = 40°}$

11. Izračunaj velikosti označenih kotov.

a)



Če dodamo še točko D in gledamo trikotnik ABD, upoštevamo da je vsota notranjih kotov v tem trikotniku 180°.

$25° + 130° + \frac{\beta}{2} = 180°$

$\rightarrow \frac{\boldsymbol{\beta}}{\mathbf{2}} = 180° - 130° - 25° = \mathbf{25°}$

$\rightarrow \boldsymbol{\beta = 50°}$

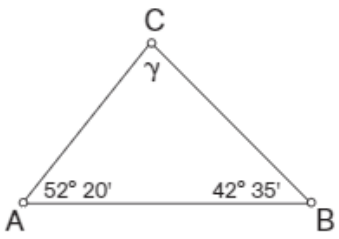
Če pa gledamo osnovni trikotnik ABC:

$50° + \beta + \gamma = 180°$

$\rightarrow \gamma = 180° - 50° - 50° \ (\beta = 50°)$

$\rightarrow \boldsymbol{\gamma = 80°}$

b)



Vsota notranjih kotov je 180°.

$52°20' + 42°35' + \gamma = 180°$

$\rightarrow \gamma = 180° - 52°20' - 42°35$

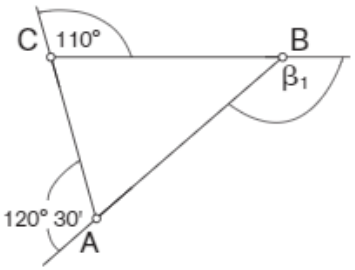
Upoštevamo: $1° = 60'$

$\boldsymbol{\gamma} = 179°60' - 52°20' - 42°35 =$

$= \mathbf{85°5'}$

(najprej odštejemo stopinje, nato še minute)

c)



Vsi dani koti so zunanji koti trikotnika ABC.
Vemo, da je njihova vsota 360°.

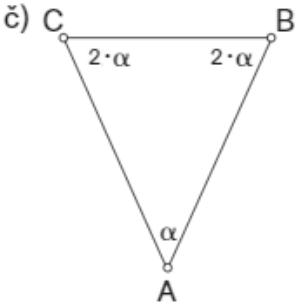
$\beta_1 + 110° + 120°30' = 360°$

$\boldsymbol{\beta_1} = 360° - 110° - 120°30' =$

$= 359°60' - 110° - 120°30' =$

$= \mathbf{129°30'}$

č)



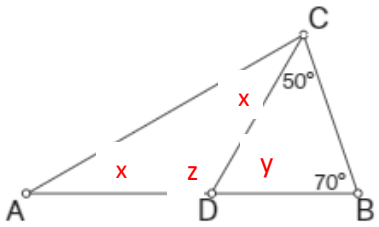
Vsota notranjih kotov je 180°.

$\alpha + 2\alpha + 2\alpha = 180°$

$5\alpha = 180° \ /:5$

$\boldsymbol{\alpha = 36°}$

12. Izračunaj velikosti kotov ∢CDA, ∢DAC in ∢ACD, če je |AD| = |DC|.



Trikotnik ADC je enakokrak, zato sta kota ob osnovnici enaka. Označimo ju na sliki z x.

Označimo kot BDC z y, kot CDA pa z z.

Vsota notranjih kotov v trikotniku BDC je 180°:

$y + 70° + 50° = 180° \ \rightarrow \ \boldsymbol{y} = 180° - 70° - 50° = \mathbf{60°}$

Ker kota y in z tvorita skupaj iztegnjeni kot, velja: $z + y = 180° \ \rightarrow \boldsymbol{z} = 180° - y = \mathbf{120°}$.

Vsota notranjih kotov v trikotniku ADC je 180°:

$2x + z = 180°$

$\boldsymbol{2x} = 180° - z = \mathbf{60°}$

$\boldsymbol{x = 30°}$

∢CDA = **z = 120°** ∢DAC = **x = 30°** ∢ACD = **x = 30°**