

Rješenja - (1.)

1) žute: $\frac{3}{7}x$
 plave: $\frac{4}{7}x$
 ukupno: x

$$\begin{aligned}\frac{3}{7}x + 2 &= \frac{4}{7}x - 6 \quad | \cdot 7 \\ 3x + 14 &= 4x - 42 \\ 3x - 4x &= -42 - 14 \\ -x &= -56 \\ \boxed{x &= 56}\end{aligned}$$

žute: $\frac{3}{7} \cdot 56 = \boxed{24}$
 plave: $\frac{4}{7} \cdot 56 = \boxed{32}$

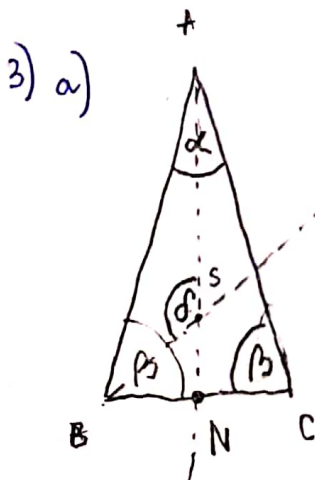
$$\begin{aligned}2) \frac{a+89}{a-2} &= \frac{a+(91-2)}{a-2} = \frac{a+91-2}{a-2} = \frac{a-2+91}{a-2} = \\ &= \frac{a-2}{a-2} + \frac{91}{a-2} = 1 + \frac{91}{a-2}\end{aligned}$$

ovo već je prirodan broj
 želimo da i to bude prirodan broj

Djeliteљи broja 91 su: 1, 7, 13 i 91

Prema tome imamo 4 mogućnosti za nazivnik:

a) $a-2=1$ <u>$a=3$</u>	b) $a-2=7$ <u>$a=9$</u>	c) $a-2=13$ <u>$a=15$</u>	d) $a-2=91$ <u>$a=93$</u>
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$$\begin{aligned}\delta &= 125^\circ 30' \\ \alpha, \beta &= ?\end{aligned}$$

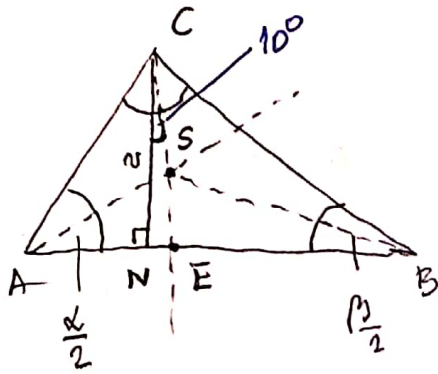
$$|\angle BSN| = 180^\circ - 125^\circ 30' = 179^\circ 60' - 125^\circ 30' = 54^\circ 30'$$

$\triangle BSN$ je pravokutan:

$$\begin{aligned}|\angle SBN| &= 90^\circ - 54^\circ 30' = 89^\circ 60' - 54^\circ 30' = \\ &= 35^\circ 30' = \frac{\beta}{2}\end{aligned}$$

$$\Rightarrow \beta = 2 \cdot (35^\circ 30') = 71^\circ \Rightarrow \alpha = 180^\circ - 2 \cdot 71^\circ = 38^\circ$$

b)



$$\alpha, \beta, \gamma = ?$$

$$|\angle ASB| = 120^\circ$$

$$\triangle ABS: \quad \frac{\alpha}{2} + \frac{\beta}{2} + 120^\circ = 180^\circ$$

$$\frac{\alpha}{2} + \frac{\beta}{2} = 60^\circ \quad | \cdot 2$$

$$\boxed{\alpha + \beta = 120^\circ}$$

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

$$120^\circ + \gamma = 180^\circ$$

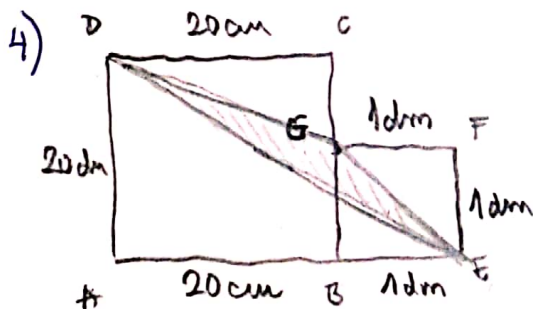
$$\gamma = 180^\circ - 120^\circ$$

$$\boxed{\gamma = 60^\circ}$$

$$|\angle ACE| = \frac{\gamma}{2} = \frac{60^\circ}{2} = 30^\circ \Rightarrow |\angle ACN| = |\angle ACE| - 10^\circ = 30^\circ - 10^\circ = 20^\circ$$

$$\triangle ANC \text{ je pravokutan} \rightarrow |\angle CAN| = 90^\circ - |\angle ACN| = 90^\circ - 20^\circ = 70^\circ = \alpha$$

$$\alpha + \beta = 120^\circ \Rightarrow \beta = 120^\circ - \alpha = 120^\circ - 20^\circ = \underline{\underline{100^\circ}}$$



$\triangle CGD$ pravokutan

$\triangle AED$ pravokutan

$\triangle BEG$ pravokutan

$\square ABGD$:

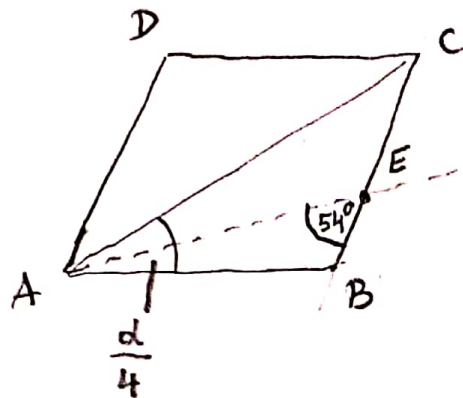
$$\begin{aligned} P_{\square ABGD} &= P_{\square ABCD} - P_{\triangle CGD} \\ &= 20 \cdot 20 - \frac{20 \cdot 10}{2} = \\ &= 400 - 100 = 300 \text{ cm}^2 \end{aligned}$$

$$P_{\triangle AED} = \frac{30 \cdot 20}{2} = 300 \text{ cm}^2$$

$$P_{\triangle BEG} = \frac{P_{\square BEFG}}{2} = \frac{10 \cdot 10}{2} = 50 \text{ cm}^2$$

$$P_{\triangle DEG} = (P_{\triangle BEG} + P_{\square ABGD}) - P_{\triangle AED} = (50 + 300) - 300 = 50 \text{ cm}^2$$

5) ABCD je zapravo romb. $\Rightarrow \boxed{\alpha + \beta = 180^\circ}$



$$|\angle BEA| = 54^\circ$$

$$|\angle DAB| = |\angle DCB| = \alpha$$

$$|\angle CAB| = \frac{\alpha}{2}$$

$$|\angle EAB| = \frac{\alpha}{4}$$

$$|\angle ABC| = |\angle ADC| = \beta$$

$\triangle ABE$: $\frac{\alpha}{4} + \beta + 54^\circ = 180^\circ$

$$\frac{\alpha}{4} + \beta = 180^\circ - 54^\circ$$

$$\frac{\alpha}{4} + \beta = 126^\circ \quad | \cdot 4$$

$$\alpha + 4\beta = 504^\circ$$

$$\alpha + 4(180^\circ - \alpha) = 504^\circ$$

$$\alpha + 720^\circ - 4\alpha = 504^\circ$$

$$-3\alpha = 504^\circ - 720^\circ$$

$$-3\alpha = -216^\circ \quad | : (-3)$$

$$\alpha = 72^\circ$$

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

$$\begin{aligned} \beta &= 180^\circ - 72^\circ \\ \beta &= 108^\circ \end{aligned}$$