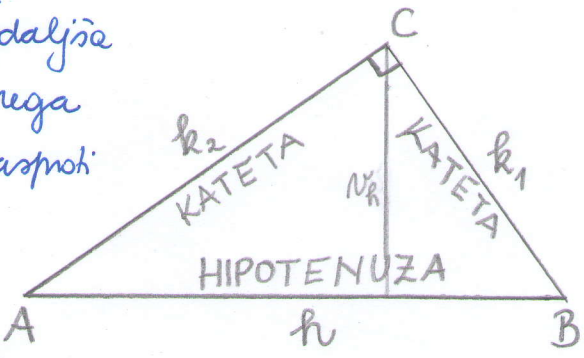
PITAGOROV IZREK

Pravokotni trikotnik

Hipotenuza je najdaljša stranica pravokotnega trikotnika. Leži nasproti pravemu kotu.

Kateti ležita na krakih pravega kota.



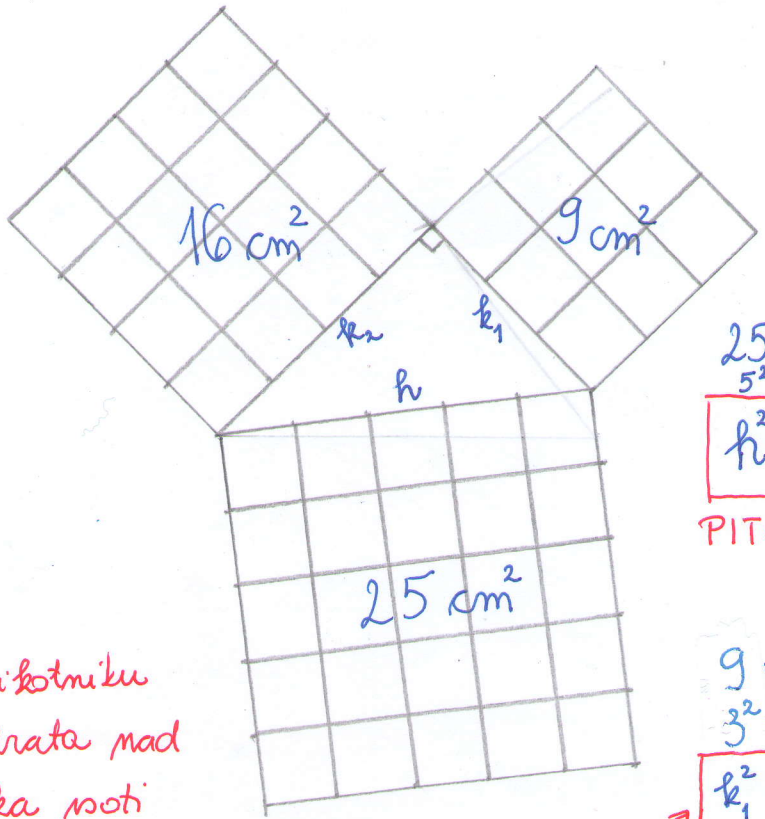
OBSEG:

$o = h + k_1 + k_2$

PLOŠČINA:

$p = \frac{k_1 \cdot k_2}{2} = \frac{h \cdot v_h}{2}$

Narišimo pravokotni trikotnik s stranicami $h = 5\,cm$, $k_1 = 3\,cm$, $k_2 = 4\,cm$. Nad vsako stranico narišimo kvadrat in ga razdelimo na $1\,cm^2$ velike kvadratke.



$25 = 9 + 16$

$5^2 = 3^2 + 4^2$

$h^2 = k_1^2 + k_2^2$

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V pravokotnem trikotniku je ploščina kvadrata nad hipotenuzo enaka vsoti ploščin kvadratov nad katetama:

$h^2 = k_1^2 + k_2^2$

$9 = 25 - 16$

$3^2 = 5^2 - 4^2$

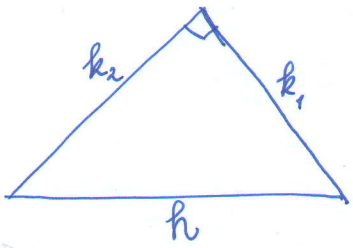
$k_1^2 = h^2 - k_2^2$

PITAGOROV IZREK ZA KATETI

$16 = 25 - 9$

$4^2 = 5^2 - 3^2$

$k_2^2 = h^2 - k_1^2$

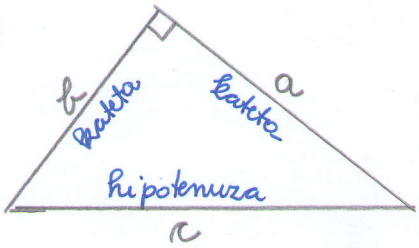


Pitagorov izrek lahko zapišemo v treh oblikah:

$$h^2 = k_1^2 + k_2^2$$
$$k_1^2 = h^2 - k_2^2$$
$$k_2^2 = h^2 - k_1^2$$

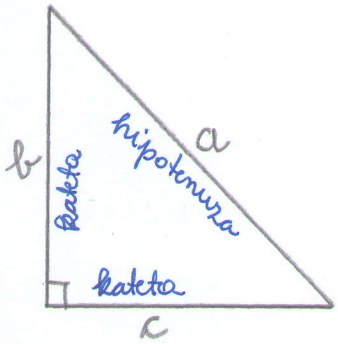
Primer: Za narisani trikotnik zapiši še tri oblike Pitagorovega izreka.

a)



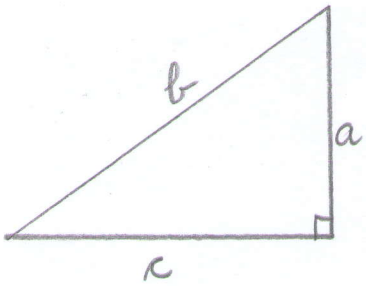
$$c^2 = a^2 + b^2$$
$$a^2 = c^2 - b^2$$
$$b^2 = c^2 - a^2$$

b)

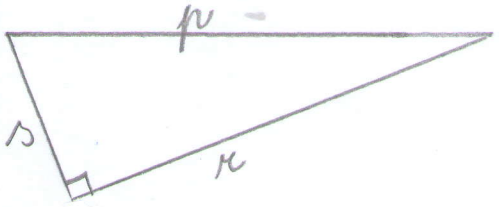


$$a^2 = b^2 + c^2$$
$$b^2 = a^2 - c^2$$
$$c^2 = a^2 - b^2$$

c)

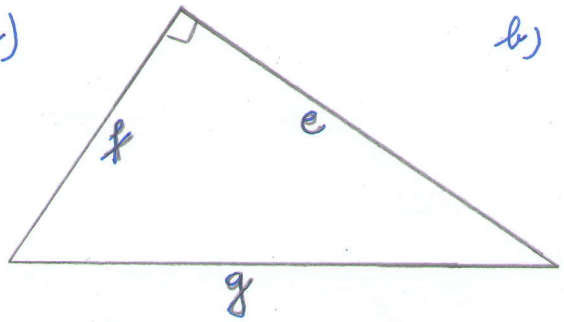


č)



Naloga: Zapiši vse tri oblike Pitagorovega izreka:

a)



b)