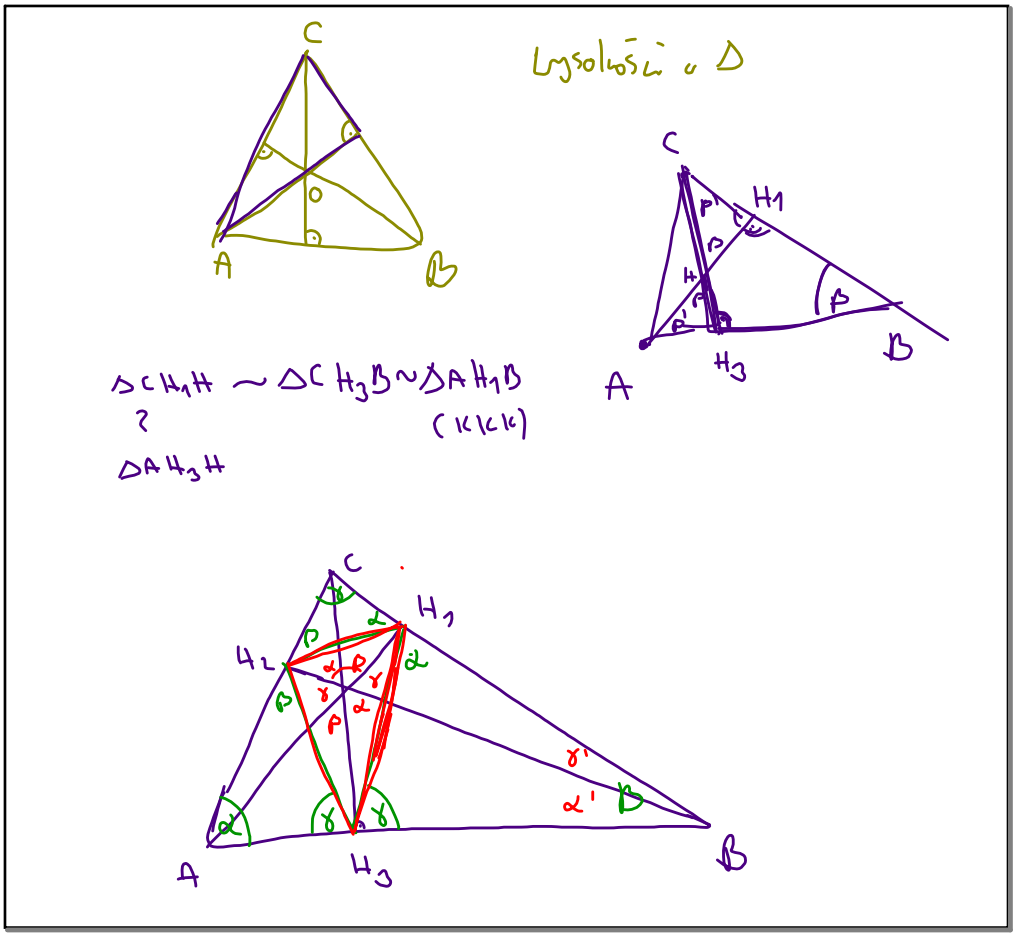


$P_\Delta = \frac{1}{2}a h_a = \frac{1}{2}b \cdot h_b = \frac{1}{2}c \cdot h_c$

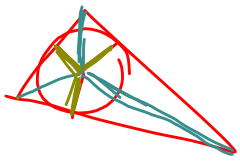
$P_\Delta = \frac{1}{2}ab\sin\gamma$

$P_\Delta = \frac{1}{2}\left|\left|\begin{matrix}\vec{AB}\\ \vec{AC}\end{matrix}\right|\right|$

$\frac{b}{\sin\beta} = \frac{a}{\sin\alpha} \qquad b = \frac{a\sin\beta}{\sin\alpha}$

$P_\Delta = \sqrt{p(p-a)(p-b)(p-c)}$

$p = \frac{1}{2}Obw = \frac{1}{2}(a+b+c)$



$P_\Delta = rp$

$P = \frac{abc}{4R}$

$P = \frac{1}{2}a^2 \cdot \frac{\sin\beta \cdot \sin\gamma}{\sin\alpha}$

$P = 2R^2 \cdot \sin\alpha \sin\beta \cdot \sin\gamma$

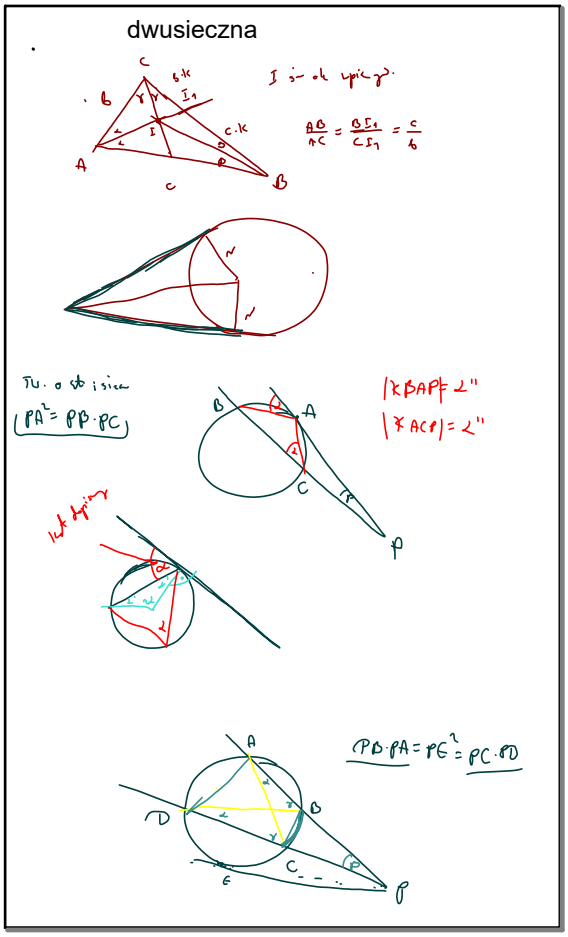
TW SIN

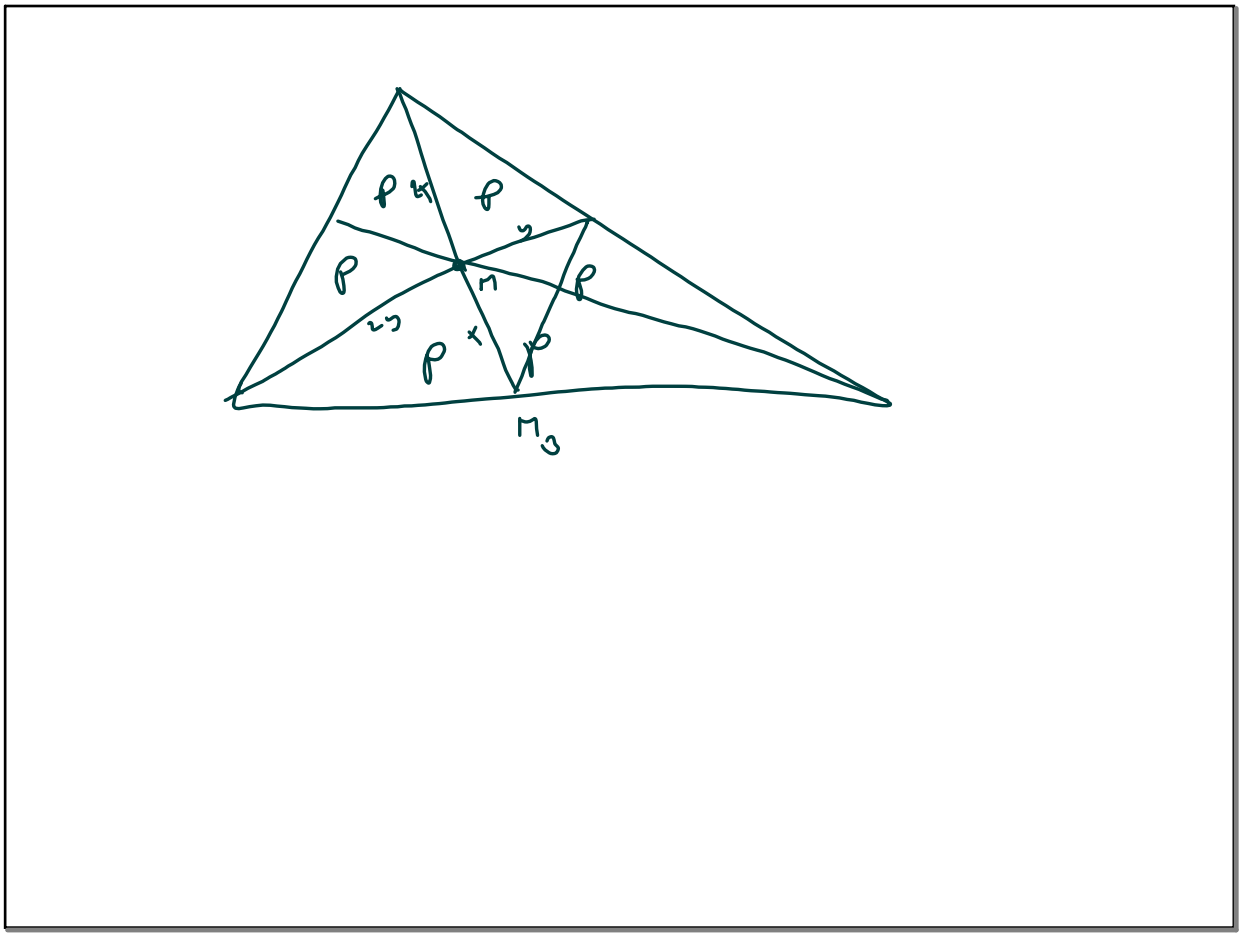
$2R = \frac{a}{\sin\alpha} = \frac{b}{\sin\beta} = \frac{c}{\sin\gamma}$

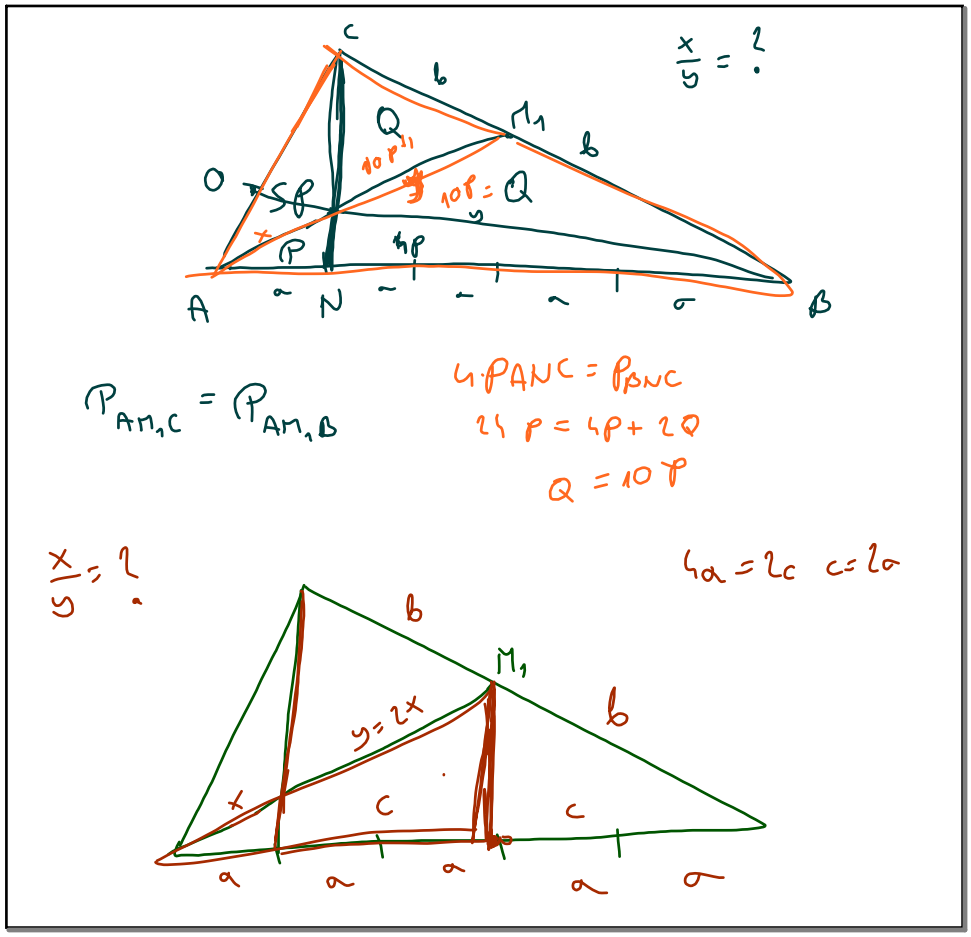
TCCOS

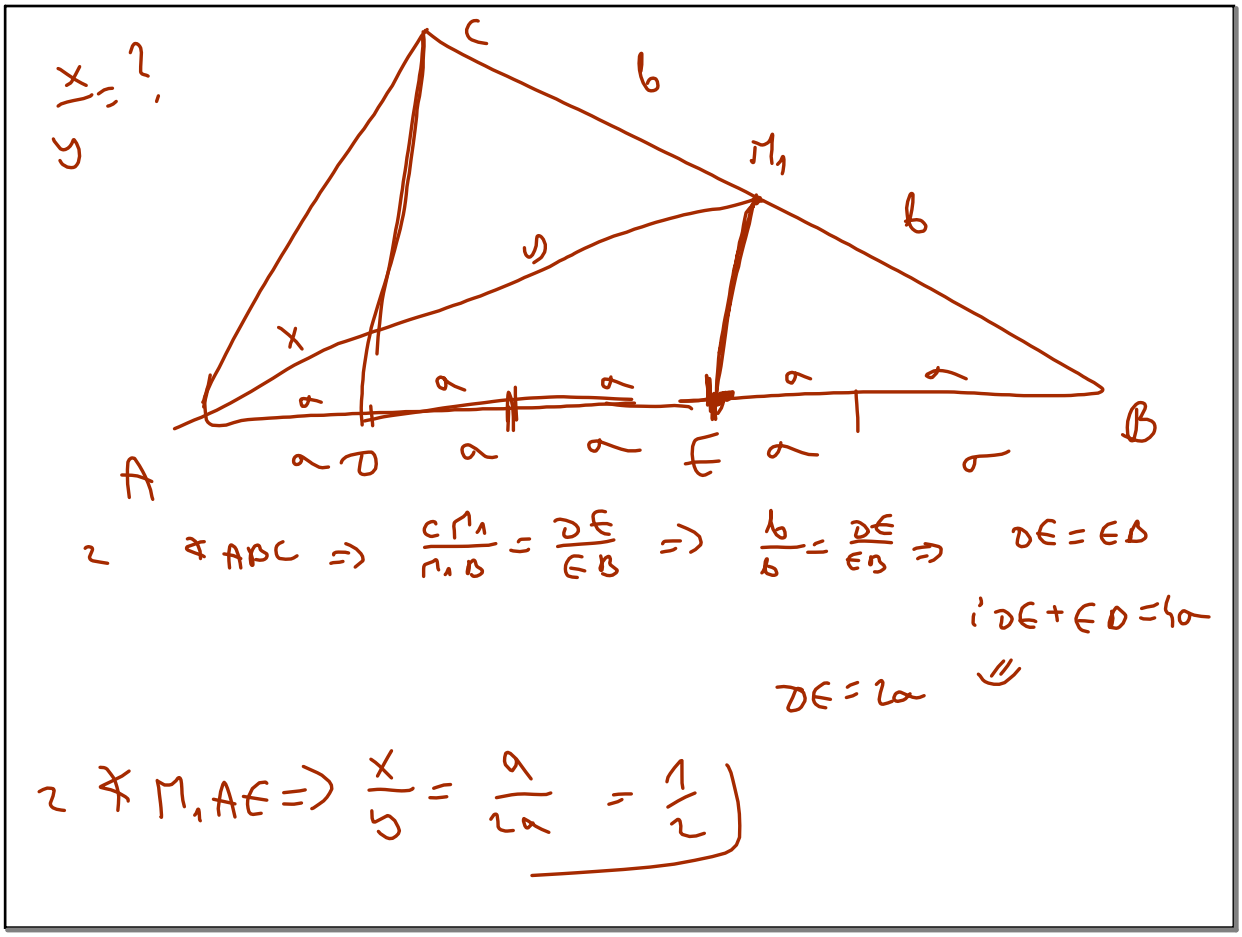
$c^2 = a^2 + b^2 - 2ab\cos\gamma$

dwusieczna






C
b
M1
b
Q
10P
10P = Q
O
5P
x
P
4P
A
N
B
x/y = ?
P_AM1C = P_AM1B
4·P_ANC = P_BNC
4P = 4P + 2Q
Q = 10P
x/y = ?
4a = 2c c = 2a
b
M1
b
y = 2x
x
c
c
a a a a a


x/y = ?
C
b
M1
b
y
x
a a a a a a
A
D
E
B
2 ∢ ABC ⇒ CM1/M1B = DE/EB ⇒ b/b = DE/EB ⇒ DE = EB
i DE + EB = 4a
DE = 2a
2 ∢ M1AE ⇒ x/y = a/2a = 1/2