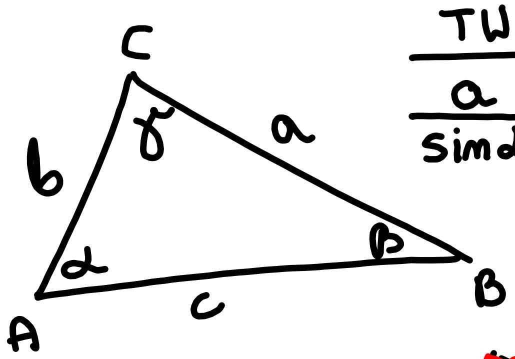
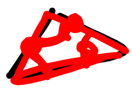


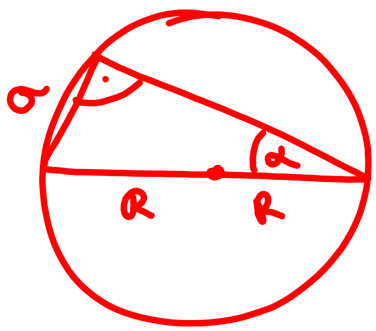
TW. SIN

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



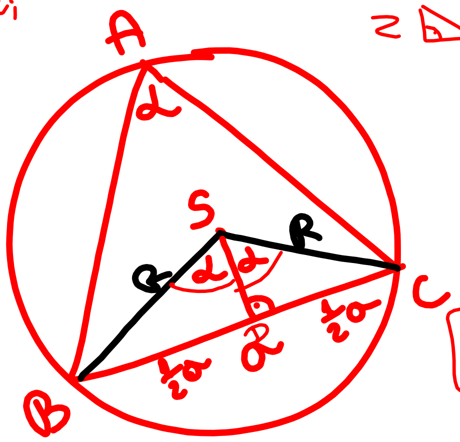
paź 6-07:10

$$\frac{a}{\sin\alpha} = 2R$$



paź 6-07:23

$\frac{a}{\sin\alpha} = 2R$?



z ◺DSC ⇒

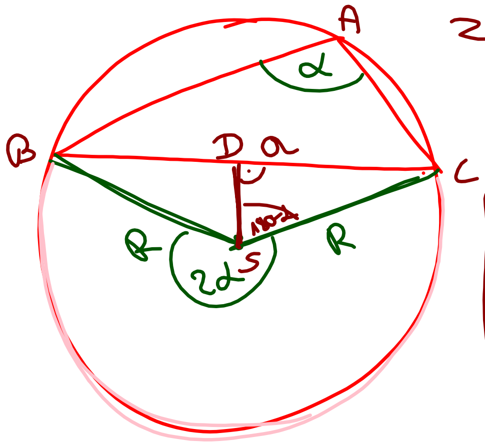
$$\sin\alpha = \frac{\frac{1}{2}a}{R}$$

$$\frac{1}{2}a = \sin\alpha \cdot R$$

$$a = 2\sin\alpha \cdot R$$

$$\boxed{\frac{a}{\sin\alpha} = 2R}$$

paź 6-07:26



z ◺SDC ⇒

$$\sin(180^\circ - \alpha) = \frac{\frac{1}{2}a}{R}$$

TW F

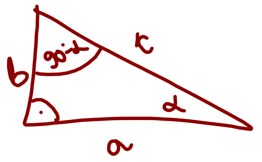
$$\sin(180^\circ - \alpha) = \sin\alpha$$
$$\cos(180^\circ - \alpha) = -\cos\alpha$$
$$tg(180^\circ - \alpha) = -tg\alpha$$
$$tg(180 - \alpha) = -ctg\alpha$$

paź 6-07:33

$$\boxed{\begin{aligned} \sin(90^\circ-\alpha) &= \cos\alpha \\ \cos(90^\circ-\alpha) &= \sin\alpha \\ tg(90^\circ-\alpha) &= ctg\,\alpha \\ ctg(90^\circ-\alpha) &= tg\,\alpha \end{aligned}}$$

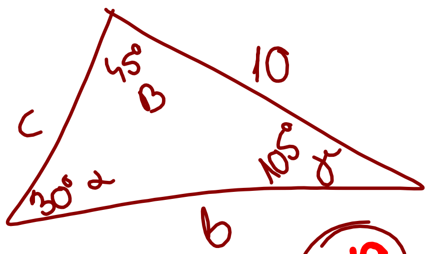
$\alpha \in (0^\circ, 90^\circ)$

$tg\,37^\circ = \frac{1}{tg\,53^\circ}$



$$tg\,\alpha = \frac{1}{tg(90^\circ-\alpha)} = \frac{1}{ctg\,\alpha}$$

paź 6-07:38



$\sin(180^\circ-\alpha) = \sin\alpha$

$\sin(180^\circ-105^\circ) = \sin 75^\circ$

ZTW sin

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

$$20 = \frac{10}{\frac{1}{2}} = \frac{b}{\frac{\sqrt{2}}{2}} = \frac{c}{\sin 105^\circ}$$

$b = 10\sqrt{2}$

paź 6-07:44

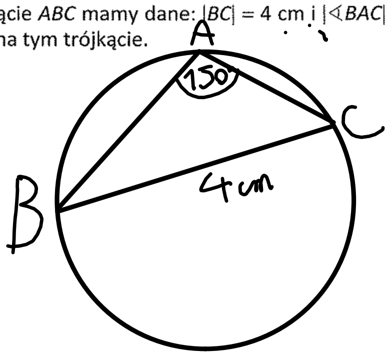
$$20 = \frac{b}{\frac{\sqrt{2}}{2}} \quad \Big| \cdot \frac{\sqrt{2}}{2}$$

$$b = 20 \cdot \frac{\sqrt{2}}{2} = \underline{10\sqrt{2}}$$

$$20 = \frac{c}{\sin 75} \Rightarrow c = \underline{20 \cdot \sin 75^\circ}$$

paź 6-07:38

6.103. W trójkącie *ABC* mamy dane: $|BC| = 4$ cm i $|\sphericalangle BAC| = 150°$. Oblicz promień koła opisanego na tym trójkącie.



$$\sin 150^\circ = \sin(180^\circ - 30^\circ) = \sin 30^\circ = \frac{1}{2}$$

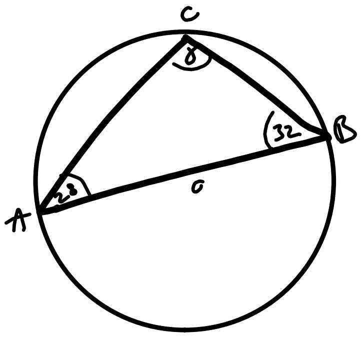
$$\frac{a}{\sin\alpha} = 2R$$

$$\frac{4}{1} \cdot \frac{2}{1} = 8$$

$$R = 8 : 2 = 4$$

paź 6-08:01

6.104. W trójkącie *ABC* dane są miary kątów przy boku *AB*: 28° i 32°. Promień koła opisanego na trójkącie jest równy 8 cm. Oblicz długość boku *AB*.



$\gamma = 180° - (28° + 32°) = 120°$

$$\boxed{\frac{c}{\sin\gamma} = 2R}$$

$\sin 120° = \sin(180° - 60°) = \sin 60° = \frac{\sqrt{3}}{2}$

$\frac{c}{\frac{\sqrt{3}}{2}} = 2 \cdot 8$

$c = 16 \cdot \frac{\sqrt{3}}{2}$

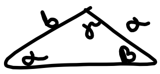
$c = 8\sqrt{3}$

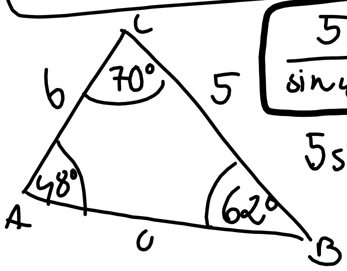
paź 6-08:07

6.105. W trójkącie *ABC* mamy dane: $|BC| = 5$ cm, $|\sphericalangle BAC| = 48°$ oraz $|\sphericalangle ACB| = 70°$. Oblicz długość boku *AC*. Wynik podaj z dokładnością do jednego miejsca po przecinku.

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

TW SIN





$\boxed{\frac{5}{\sin 48°} = \frac{b}{\sin 62°}} = \frac{c}{\sin 70°}$

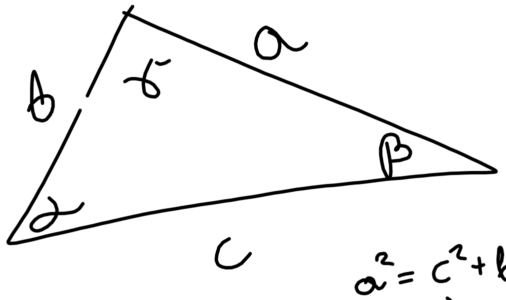
$5\sin 62° = b\sin 48°$

$b = \frac{5\sin 62°}{\sin 48°} = 5{,}9$

paź 6-08:14

TW. COS

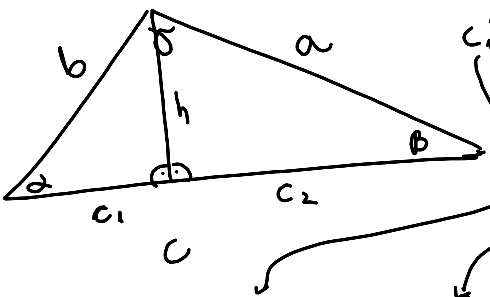
$$c^2=a^2+b^2-2ab\cdot\cos\gamma$$



$$a^2=c^2+b^2-2cb\cos\alpha$$
$$b^2=a^2+c^2-2ac\cos\beta$$

paź 6-08:25

$$b^2=c_1^2+h^2$$
$$c_1^2=b^2-h^2$$
$$c_2^2=a^2-h^2$$

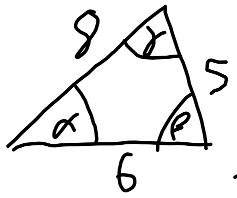


$$c^2=(c_1+c_2)^2=c_1^2+2c_1c_2+c_2^2=a^2-h^2+b^2-h^2$$

paź 6-08:29

6.116. Boki trójkąta *ABC* mają długość: $|AB| = 8$ cm, $|BC| = 6$ cm, $|AC| = 5$ cm. Oblicz cosinusy kątów tego trójkąta.

$\cos\alpha$



$a^2 = c^2 + b^2 - 2bc \cdot \cos\alpha$

$25 = 36 + 64 - 96 \cdot \cos\alpha$

$25 = 100 - 96 \cdot \cos\alpha$

$-75 = -96 \cdot \cos\alpha \ / : (-96)$

$\frac{\overset{25}{\cancel{75}}}{\underset{32}{\cancel{96}}} = \cos\alpha$

$b^2 = a^2 + c^2 - 2ac \cdot \cos\beta$

$64 = 25 + 36 - 60 \cdot \cos\beta$

$64 = 61 - 60 \cdot \cos\beta$

$3 = -60 \cdot \cos\beta \ / : (-60)$

$\frac{1}{-20} = \cos\beta$

paź 6-07:38

33, 28, 25 / 189

paź 6-07:18