

ДОК-ТЬ, ЧТО
 $c^2 = a^2 + b^2 - 2ab \cdot \cos C$
 $a^2 = b^2 + c^2 - 2bc \cdot \cos A$
 $b^2 = a^2 + c^2 - 2ac \cdot \cos B$

$$h^2 = a^2 - d^2 = a^2 - \cos^2 C \cdot a^2$$

$$d = \cos C \cdot a$$

$$e = b - \cos C \cdot a$$

$$c^2 = a^2 - \cos^2 C \cdot a^2 + (b - \cos C \cdot a)^2 = a^2 - \cos^2 C \cdot a^2 + b^2 - 2b \cdot \cos C \cdot a + \cos^2 C \cdot a^2 = a^2 + b^2 - 2b \cdot \cos C \cdot a$$

$$\cos(x-y) = \cos x \cdot \cos y + \sin x \cdot \sin y$$

$$\cos(180-C) = \cos 180 \cdot \cos C + \sin 180 \cdot \sin C = -\cos C + 0$$

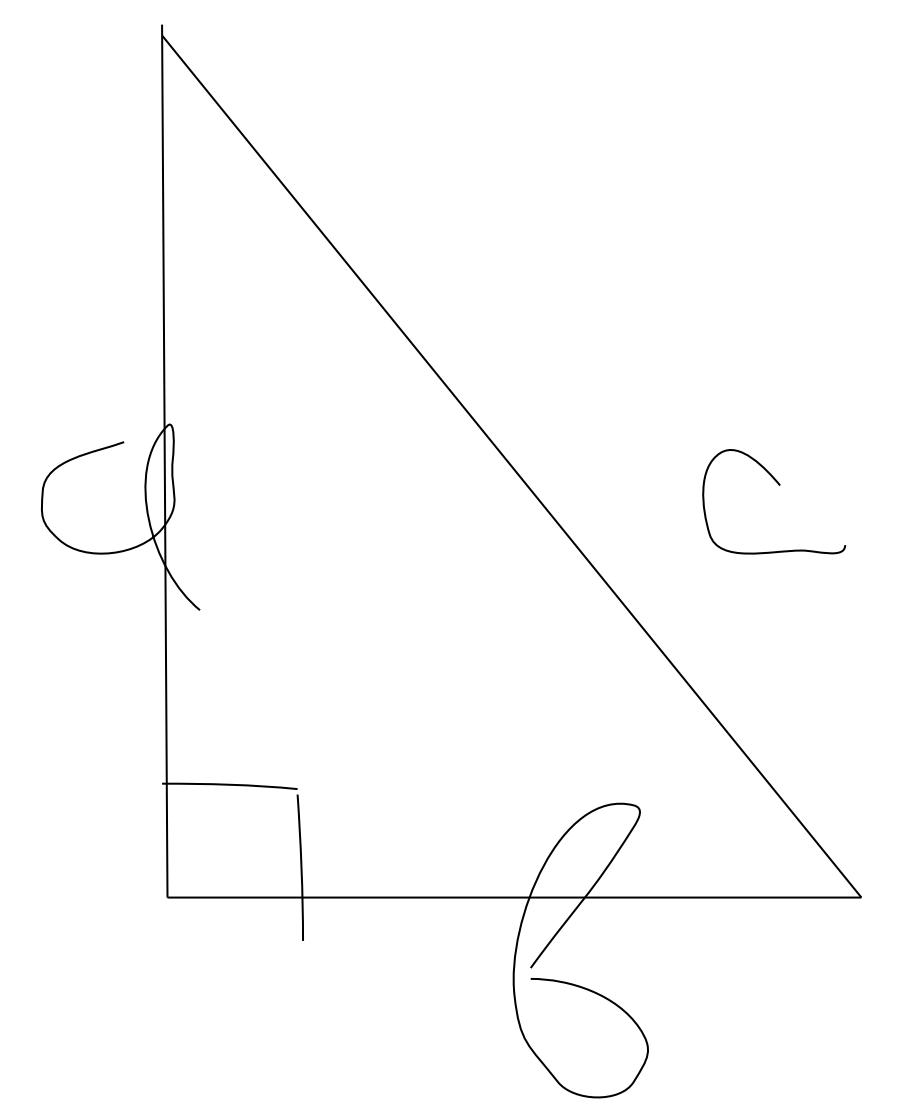
$$c^2 = h^2 + (d+e)^2$$

$$h^2 = a^2 - d^2$$

$$d = \cos(180-C) \cdot a = -\cos C \cdot a$$

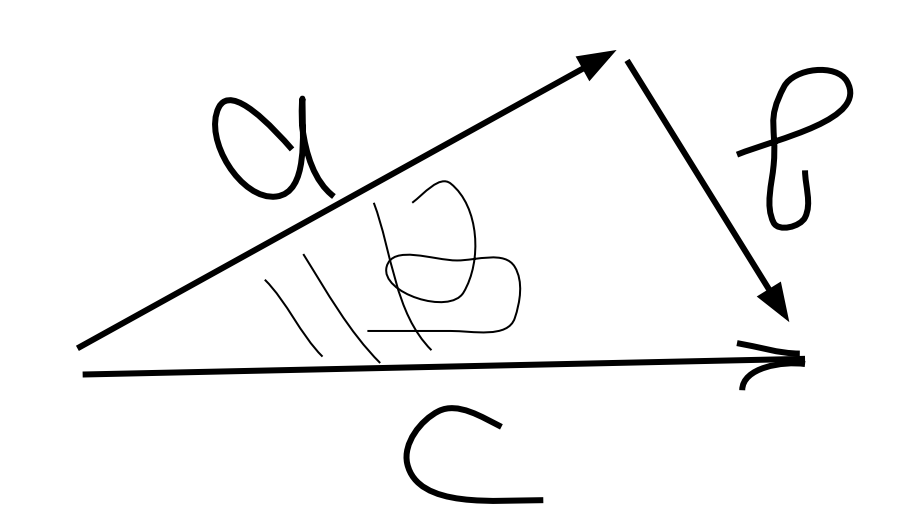
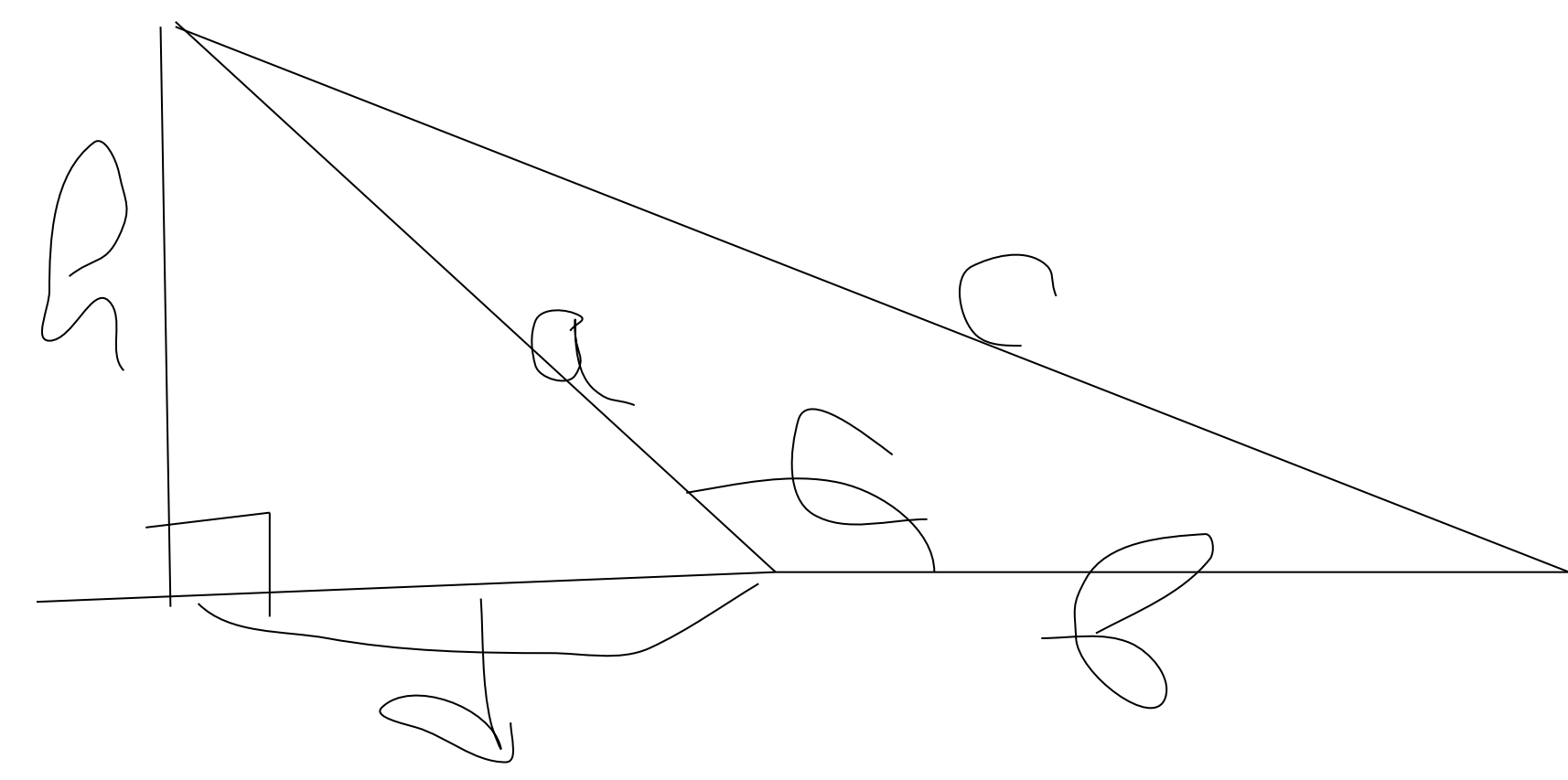
$$h^2 = a^2 - \cos^2 C \cdot a^2$$

$$c^2 = a^2 - \cos^2 C \cdot a^2 + (b - \cos C \cdot a)^2 = a^2 - \cos^2 C \cdot a^2 + b^2 - 2b \cdot \cos C \cdot a + \cos^2 C \cdot a^2 = a^2 + b^2 - 2b \cdot \cos C \cdot a$$



$$c^2 = a^2 + b^2 - 2ab \cdot \cos(P/2)$$

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



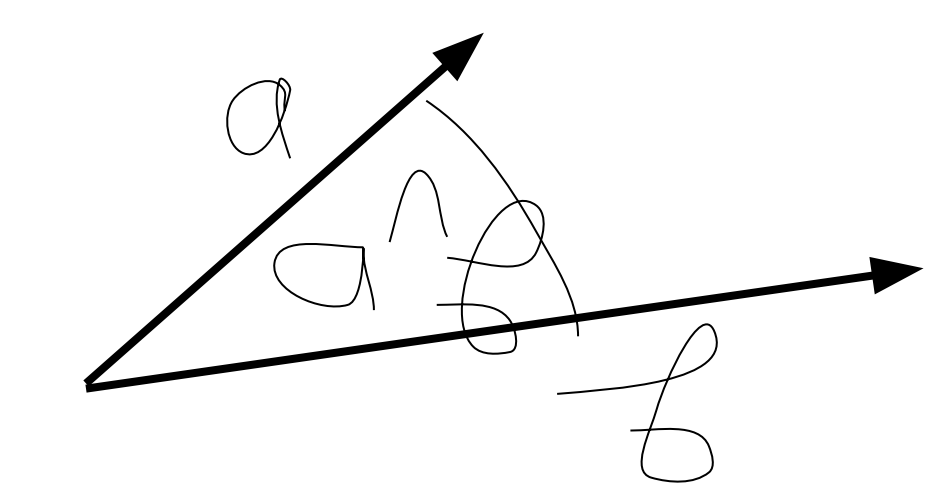
$$\underline{c} = \underline{a} + \underline{b}$$

$$\underline{b} = \underline{c} - \underline{a}$$

скалярное произведение

$$(\underline{a}, \underline{b}) = |\underline{a}| \cdot |\underline{b}| \cdot \cos(\underline{a} \wedge \underline{b}) = a_1 \cdot b_1 + a_2 \cdot b_2$$

$$\underline{a} = \{a_1, a_2\}, \underline{b} = \{b_1, b_2\}$$



свойства скалярного произведения

$$(a, b) = (b, a)$$

$$(a, a) = |a| \cdot |a| \cdot \cos 0 = |a|^2$$

$$(a, b+c) = (a, b) + (a, c)$$

глупое определение скалярного произведения

$$(\underline{a}, \underline{b}) = (|\underline{a}|^{13} + |\underline{b}|^{13}) \cdot \text{ctg}(\underline{a} \wedge \underline{b})$$

ДОК-ВО ТЕОРЕМЫ КОСИНУСОВ

$$\underline{b} = \underline{c} - \underline{a}$$

возведем это равенство в квадрат скалярно

$$(\underline{b}, \underline{b}) = (\underline{c} - \underline{a}, \underline{c} - \underline{a})$$

$$|\underline{b}|^2 = (\underline{c}, \underline{c}) - (\underline{c}, \underline{a}) - (\underline{a}, \underline{c}) + (\underline{a}, \underline{a})$$

$$|\underline{b}|^2 = |\underline{c}|^2 - 2(\underline{c}, \underline{a}) + |\underline{a}|^2$$

$$|\underline{b}|^2 = |\underline{c}|^2 - 2|\underline{c}| \cdot |\underline{a}| \cdot \cos(\underline{c} \wedge \underline{a}) + |\underline{a}|^2$$