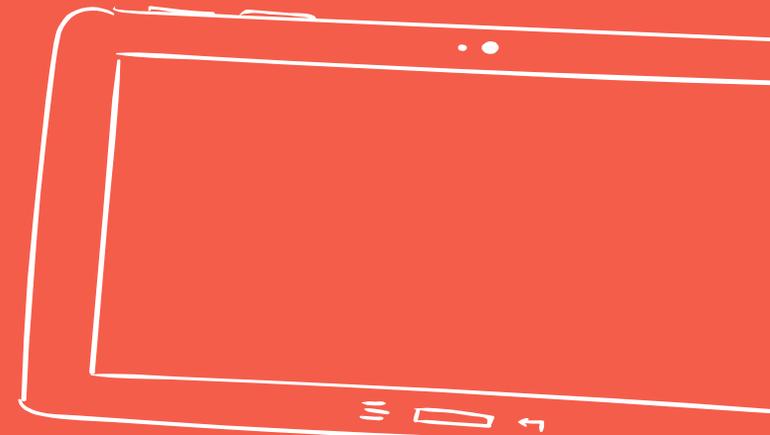
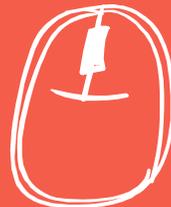
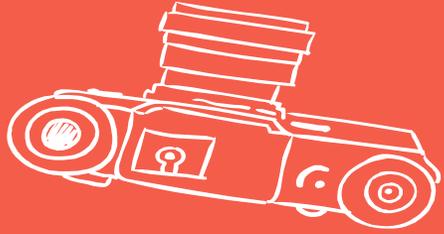
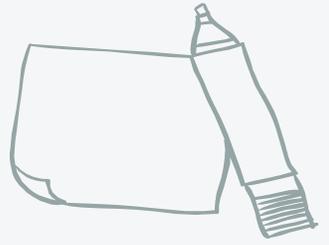
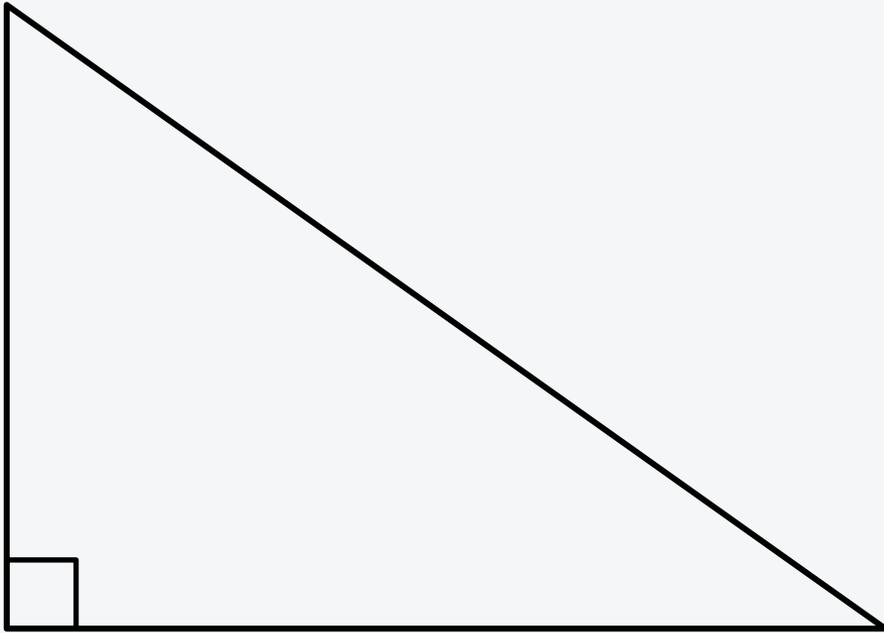


Тригонометрия



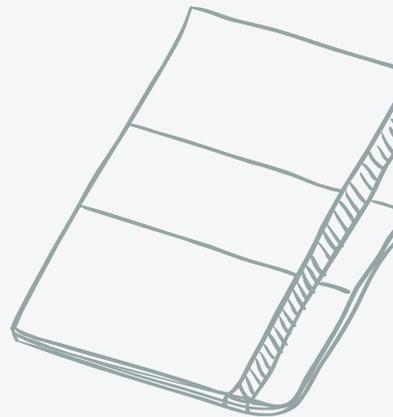


A



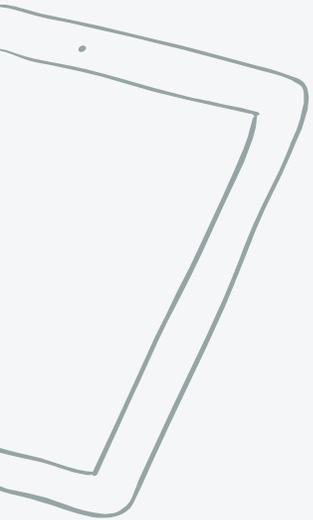
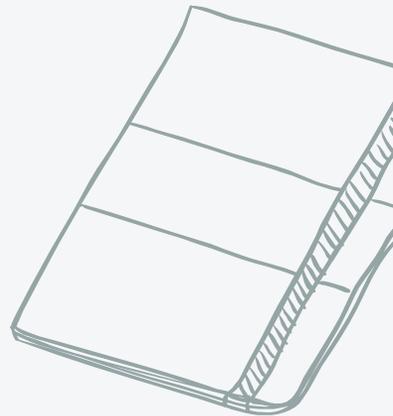
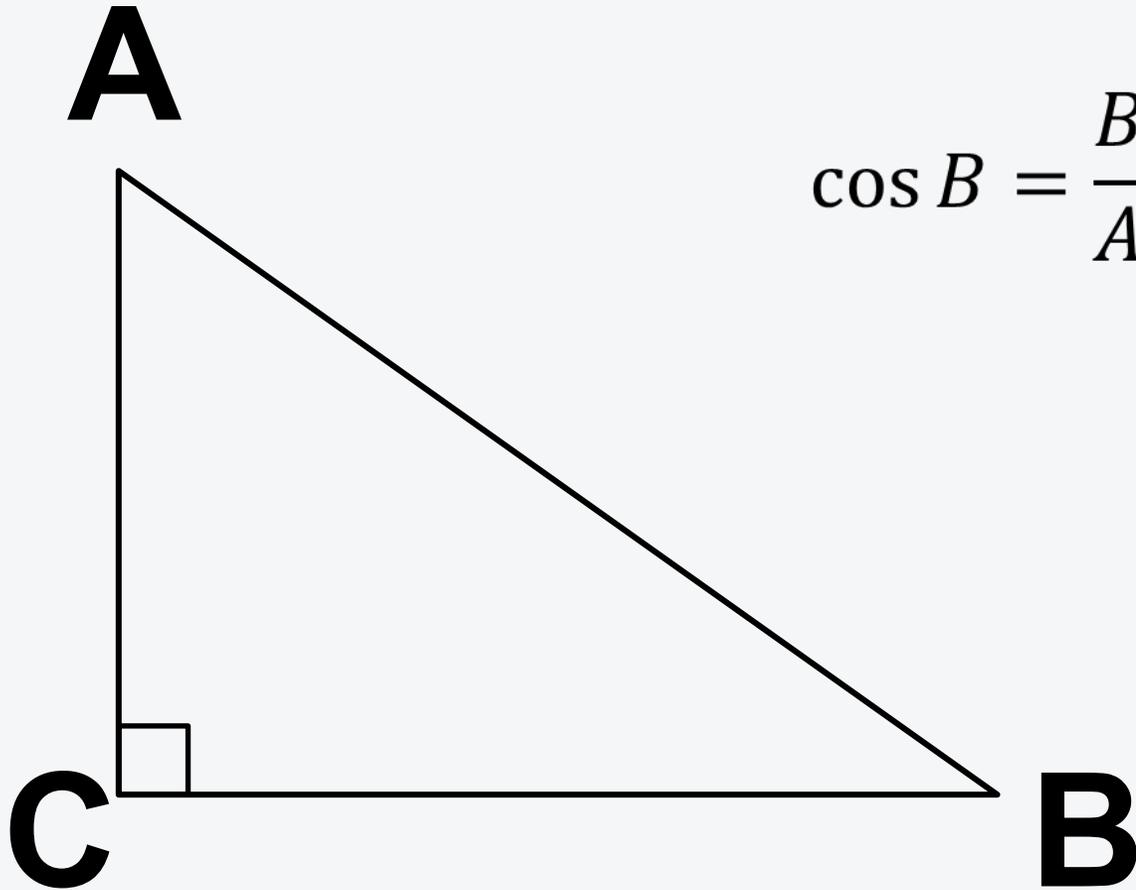
C

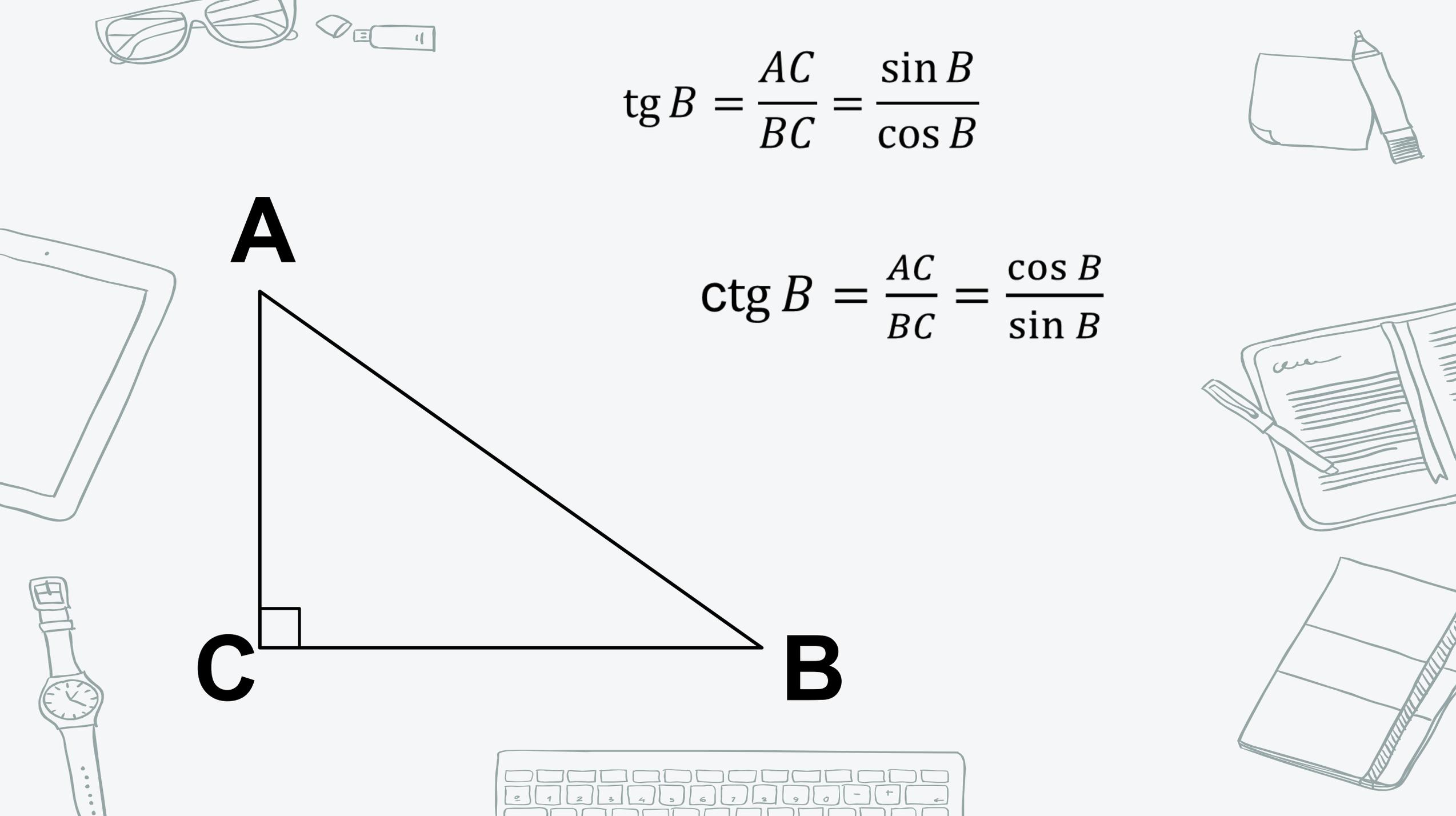
B



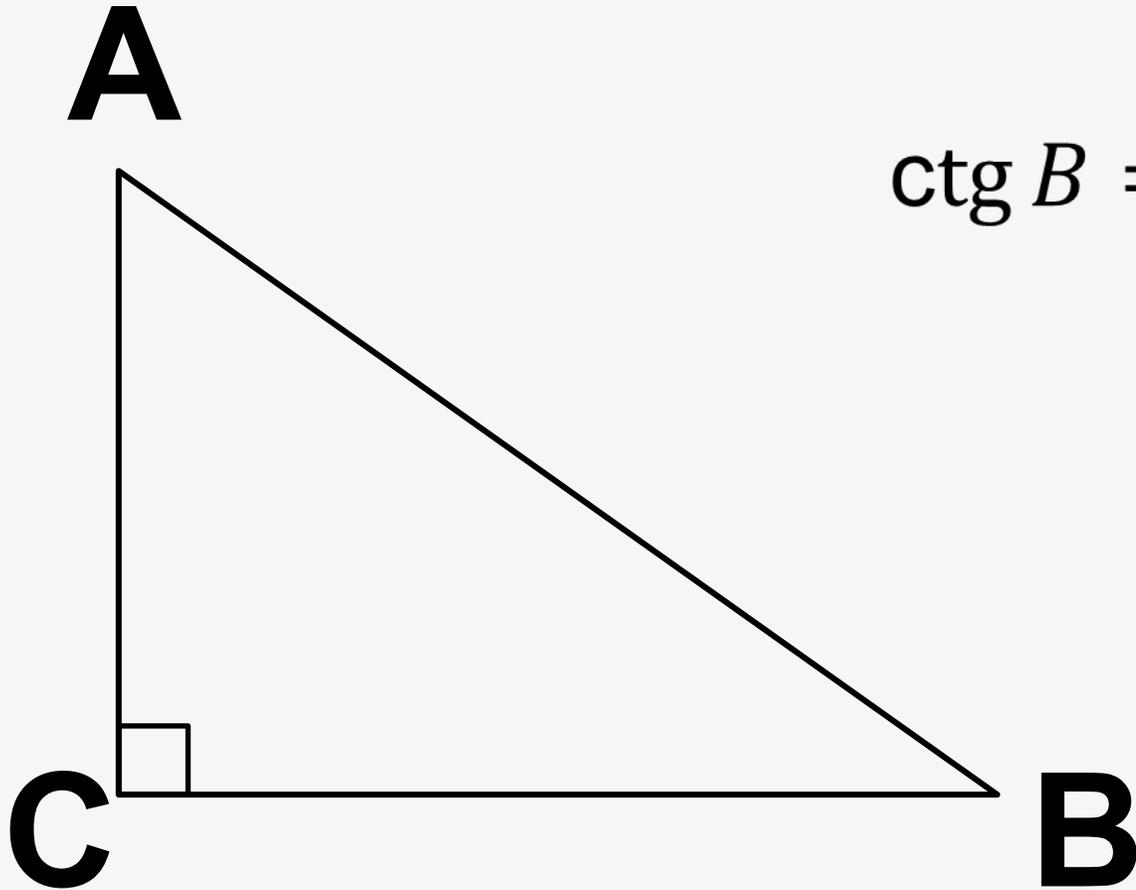

$$\sin B = \frac{AC}{AB}$$


$$\cos B = \frac{BC}{AB}$$



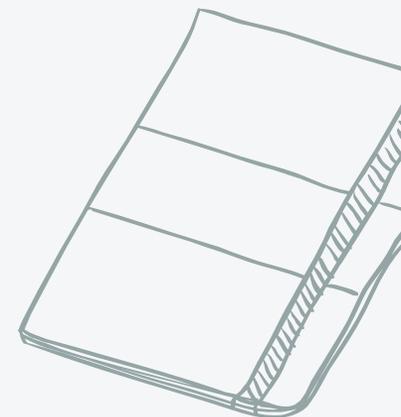
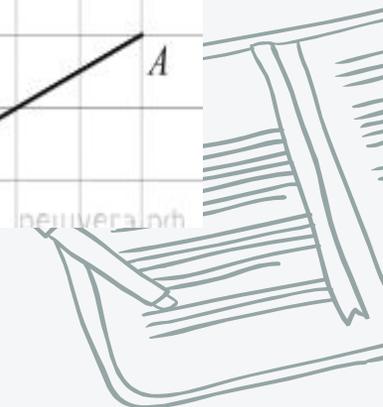
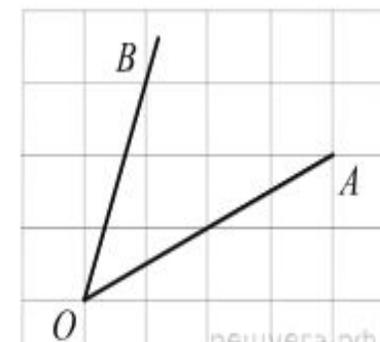

$$\operatorname{tg} B = \frac{AC}{BC} = \frac{\sin B}{\cos B}$$

$$\operatorname{ctg} B = \frac{AC}{BC} = \frac{\cos B}{\sin B}$$





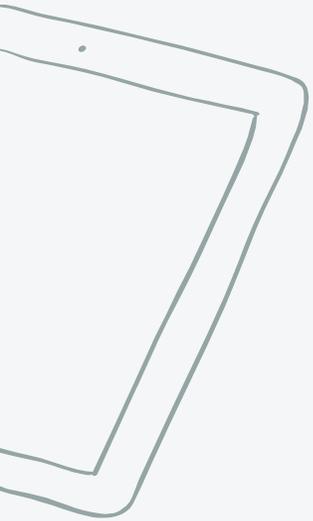
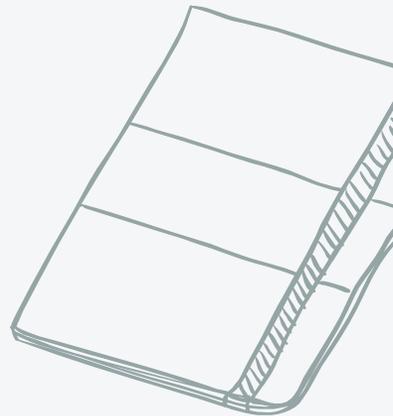
На клетчатой бумаге с размером клетки 1×1 изображён угол. Найдите тангенс этого угла.

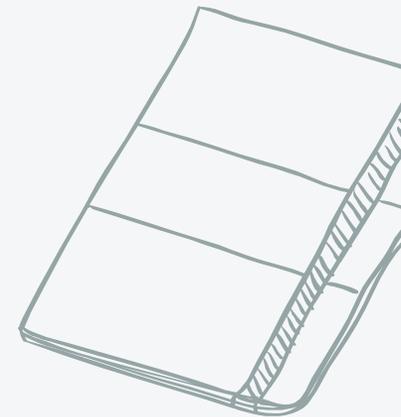
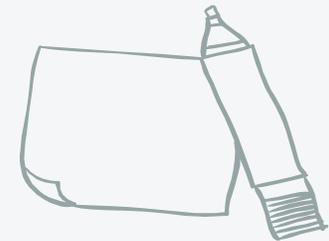
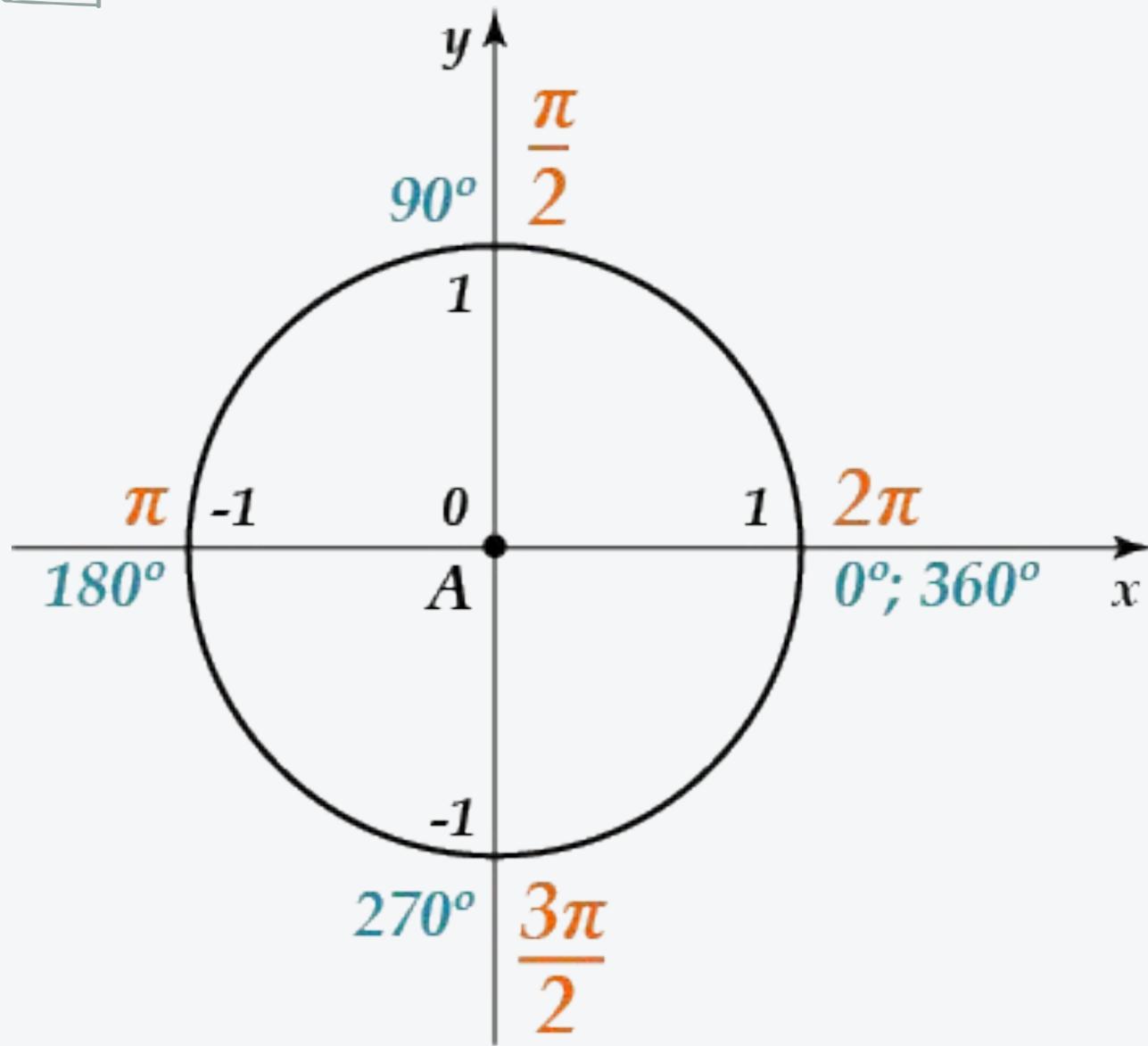




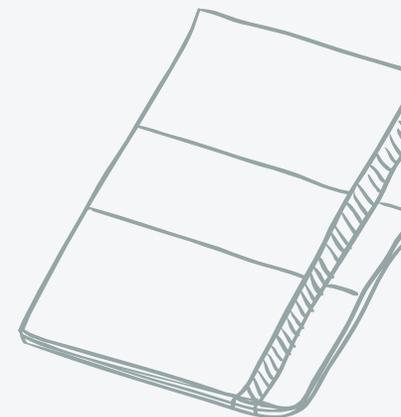
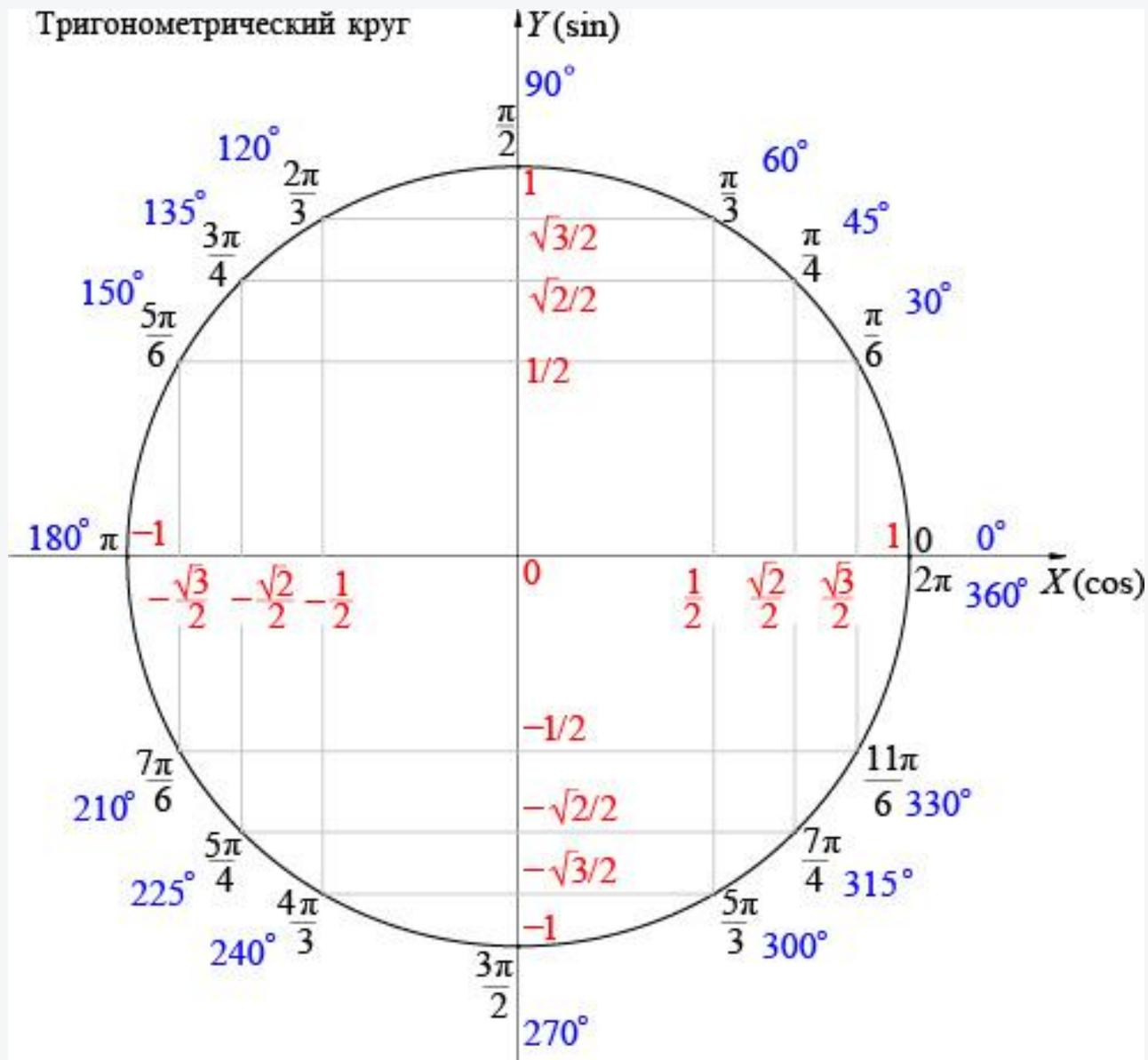
$$-1 \leq \sin B \leq 1$$

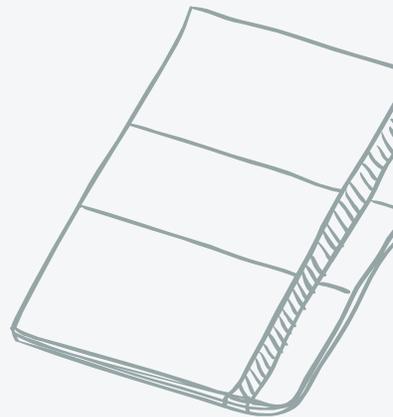
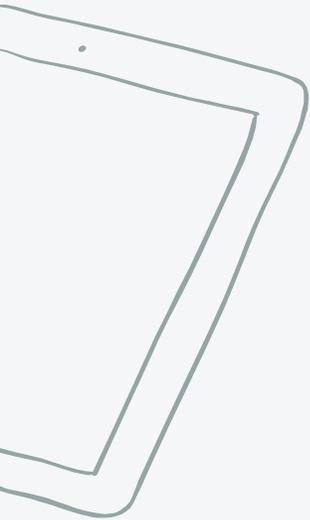
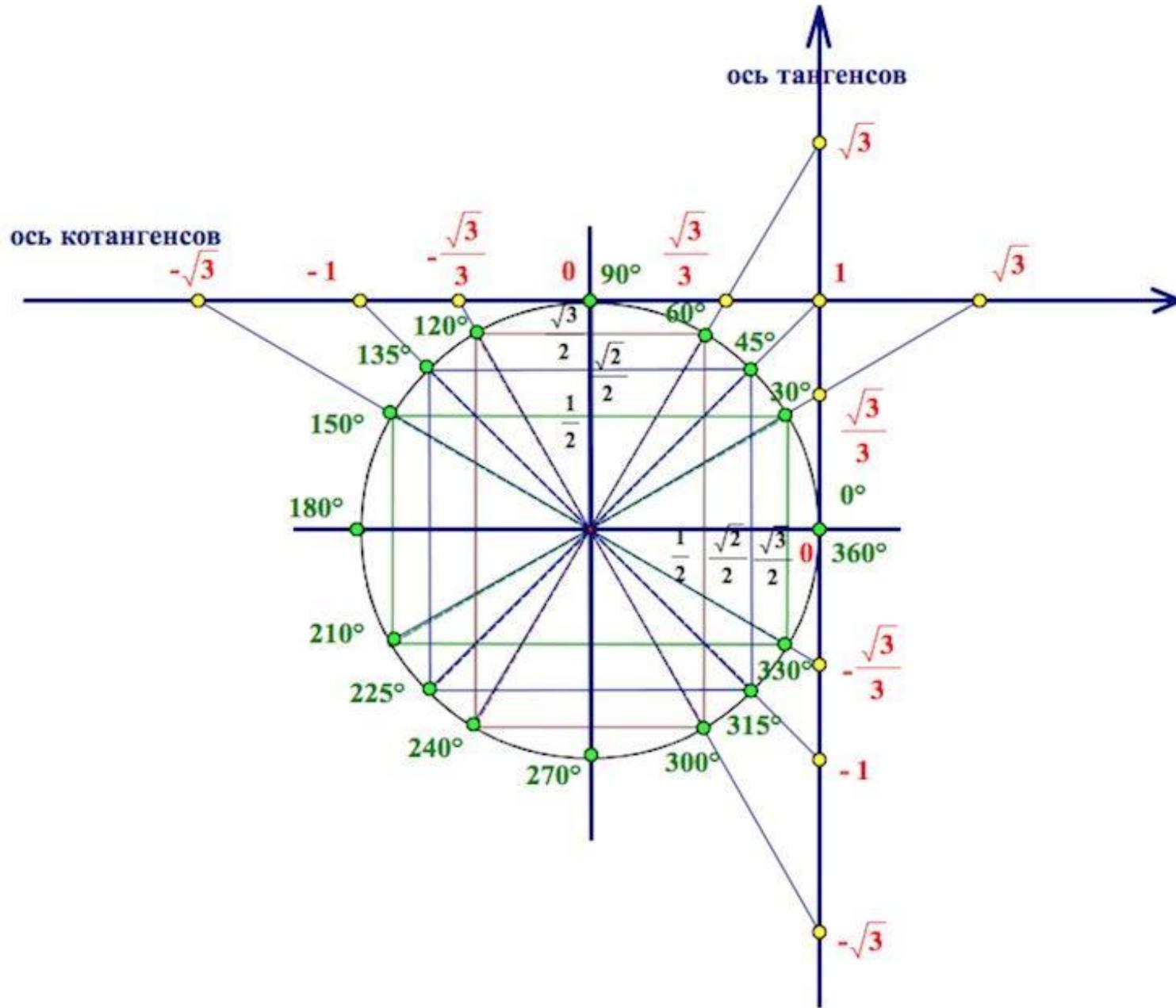
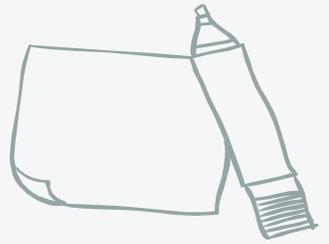
$$-1 \leq \cos B \leq 1$$

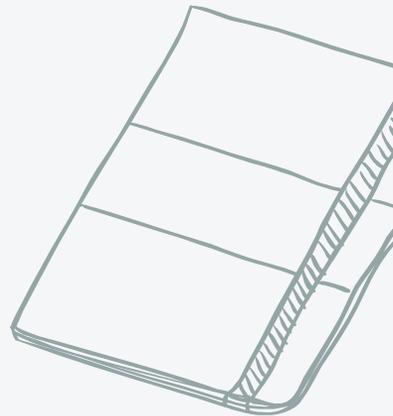
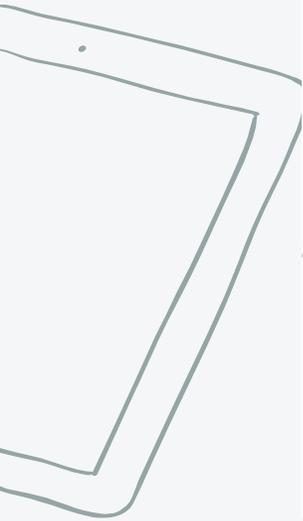
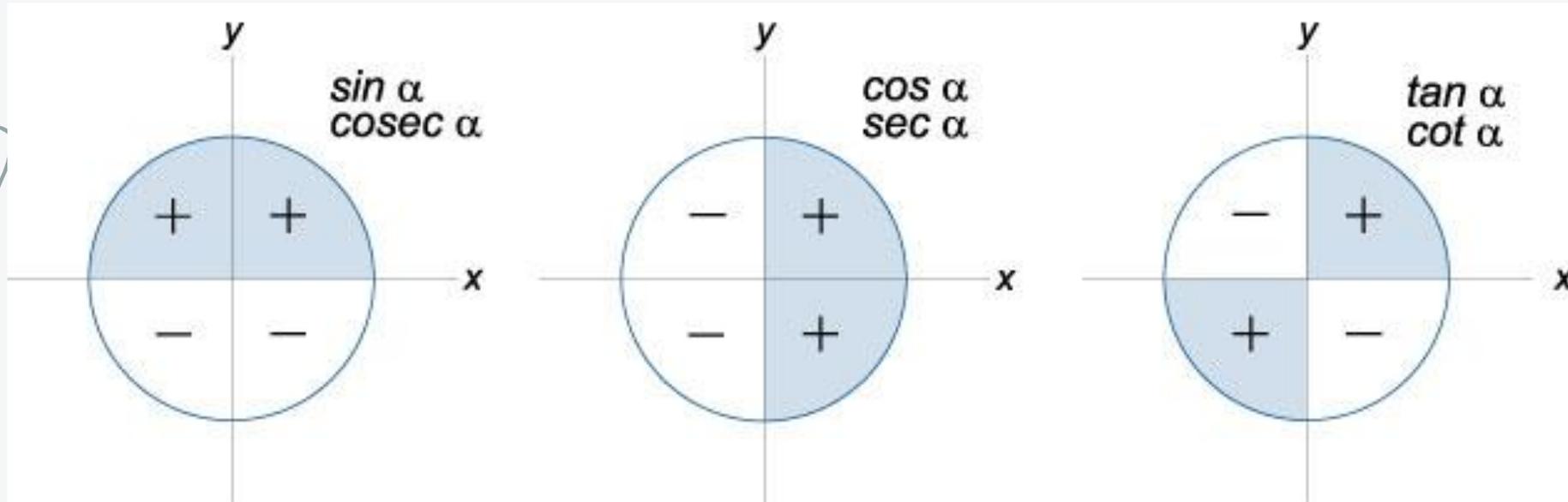




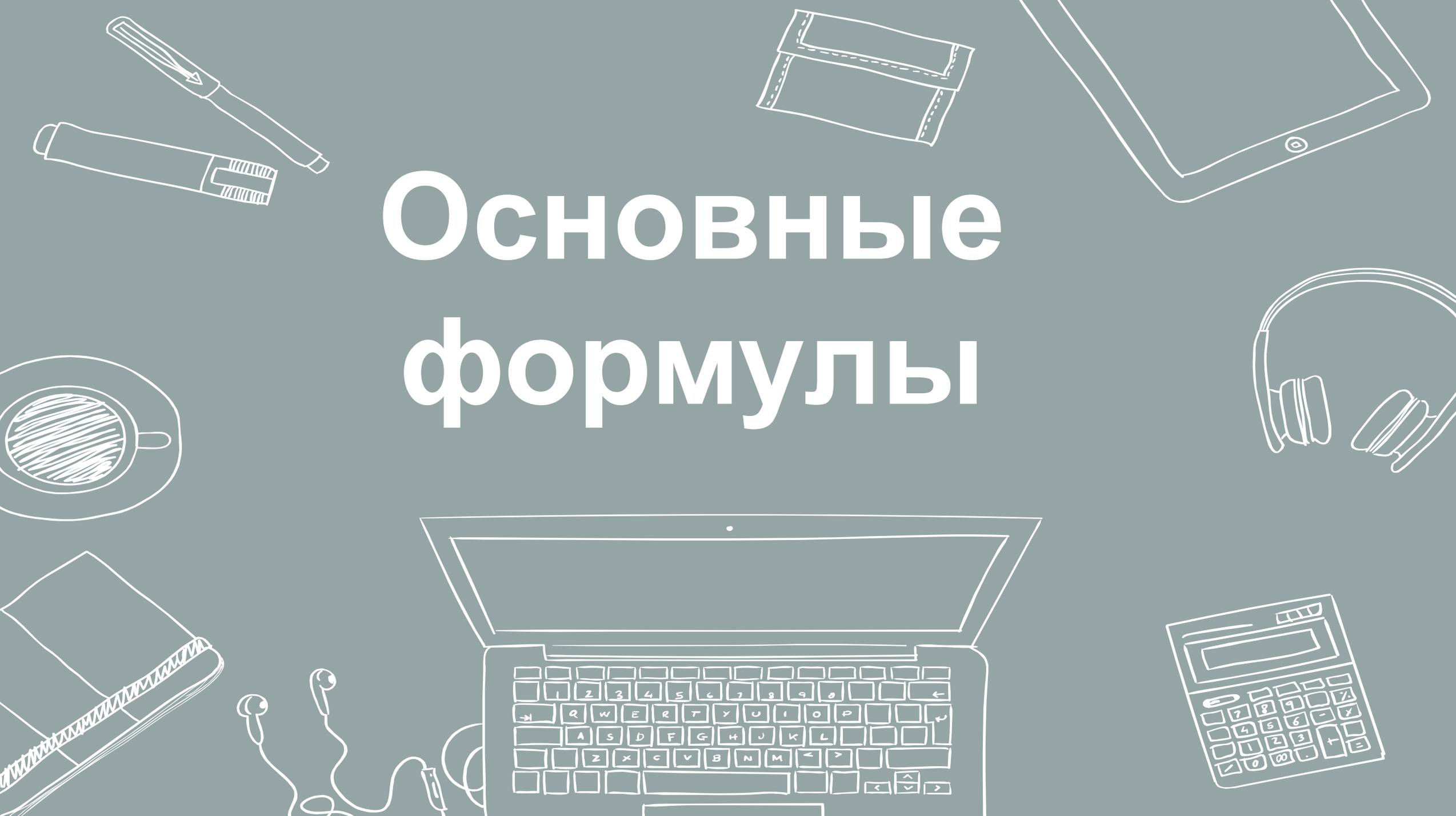
Тригонометрический круг

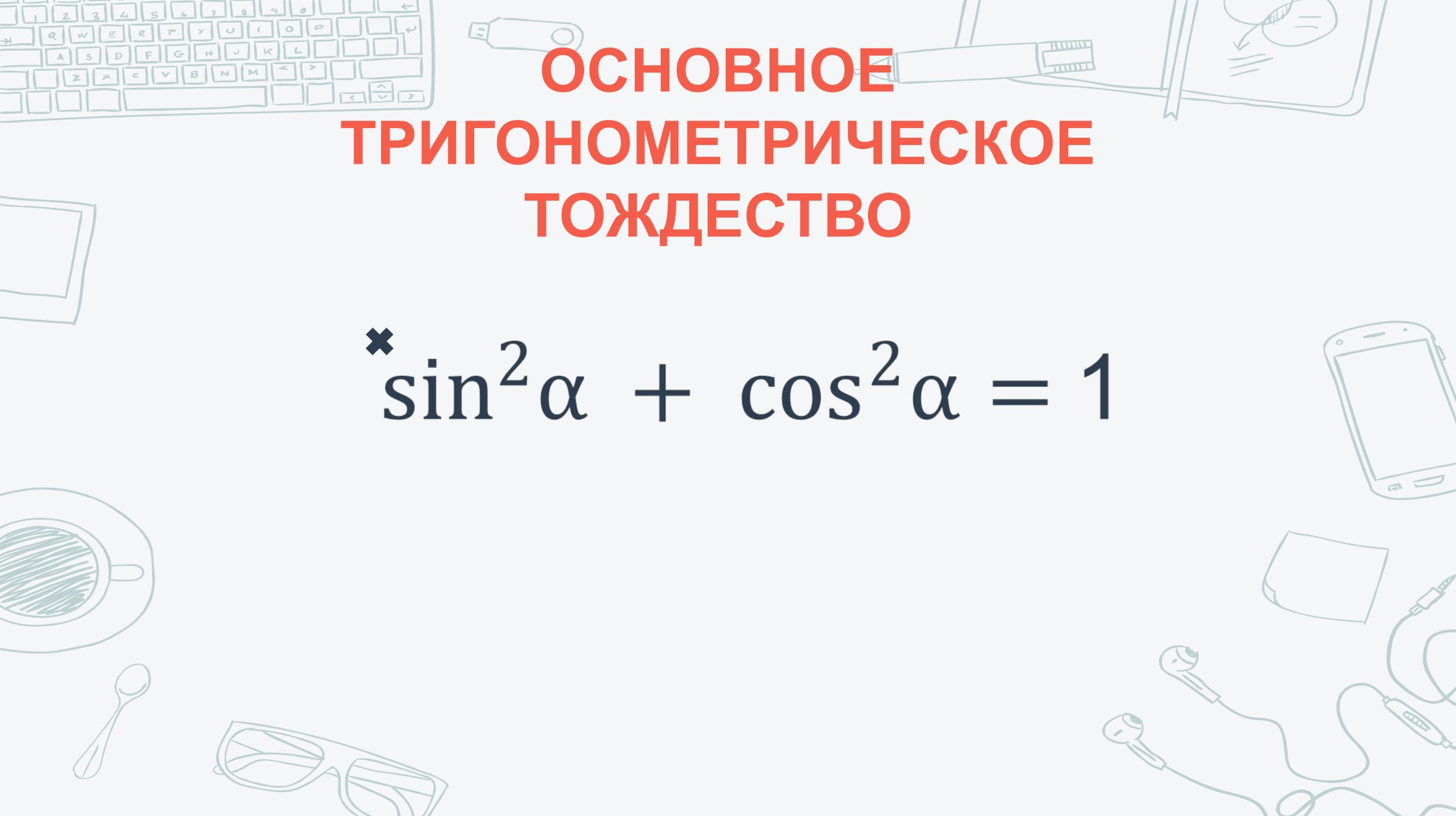






Основные формулы





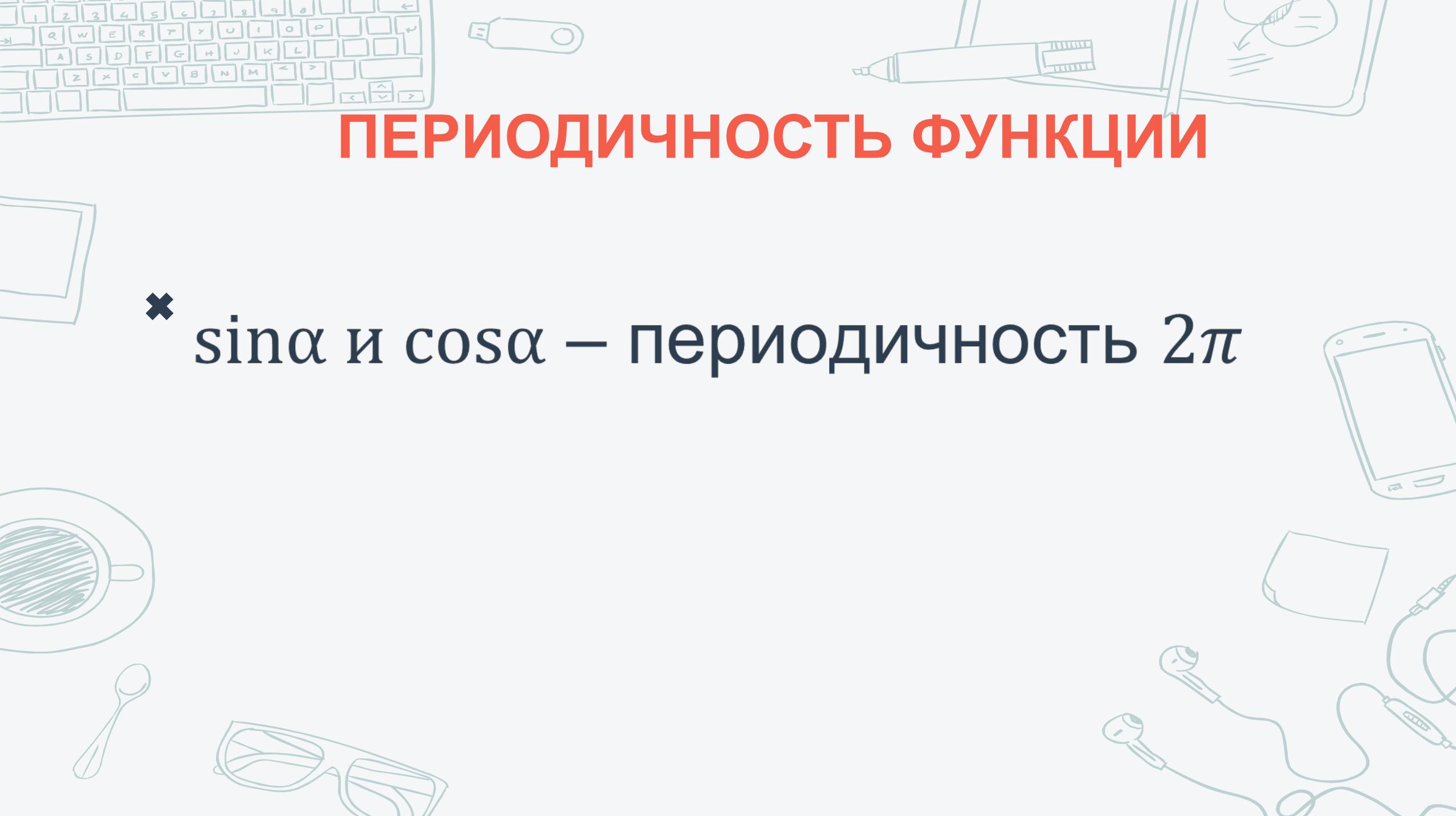
ОСНОВНОЕ ТРИГОНОМЕТРИЧЕСКОЕ ТОЖДЕСТВО

$$\times \sin^2 \alpha + \cos^2 \alpha = 1$$

ΤΑΝΓΕΝΣ Ι ΚΟΤΑΝΓΕΝΣ

×

$$\operatorname{tg}\alpha = \frac{\sin\alpha}{\cos\alpha}$$



ПЕРИОДИЧНОСТЬ ФУНКЦИИ

× $\sin \alpha$ и $\cos \alpha$ – периодичность 2π



ЧЕТНОСТЬ ФУНКЦИИ



×

$$\sin(-x) = -\sin x$$

$$\cos(-x) = \cos x$$



ОСНОВНОЕ ТРИГОНОМЕТРИЧЕСКОЕ ТОЖДЕСТВО через тангенс

$$\times \quad 1 + \operatorname{tg}^2 \alpha = \frac{1}{\cos^2 \alpha}$$

ОСНОВНОЕ ТРИГОНОМЕТРИЧЕСКОЕ ТОЖДЕСТВО через котангенс

$$\times \quad 1 + \operatorname{ctg}^2 \alpha = \frac{1}{\sin^2 \alpha}$$

ОСНОВНОЕ ТРИГОНОМЕТРИЧЕСКОЕ ТОЖДЕСТВО через котангенс

$$\times \quad 1 + \operatorname{ctg}^2 \alpha = \frac{1}{\sin^2 \alpha}$$

ДВОЙНОЙ УГОЛ

×

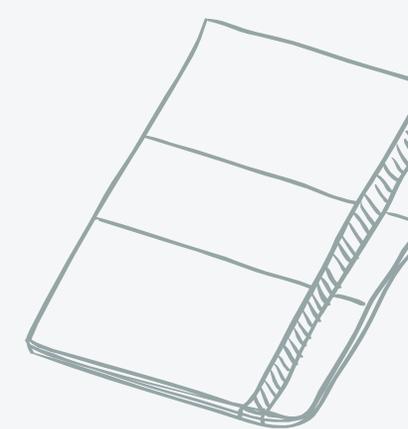
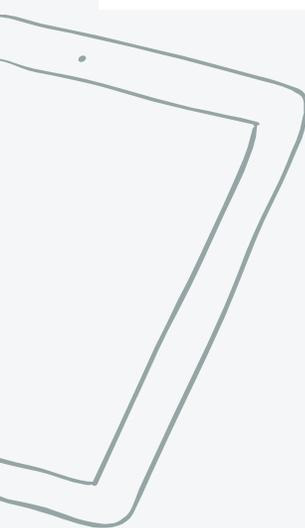
$$\sin(2\alpha) = 2 * \sin\alpha * \cos\alpha$$

ДВОЙНОЙ УГОЛ

$$\operatorname{tg}(2\alpha) = \frac{2\operatorname{tg}\alpha}{1 - \operatorname{tg}^2\alpha}$$

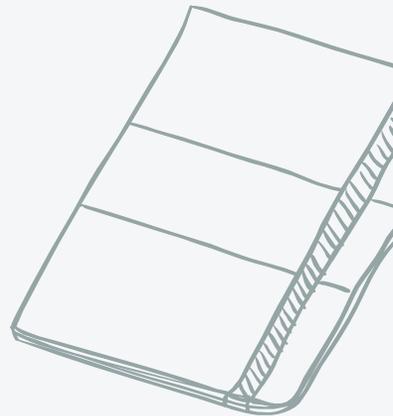
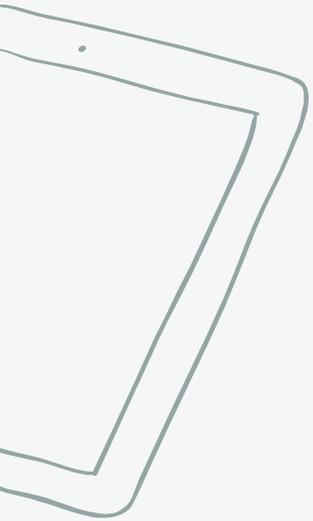


В треугольнике ABC угол C равен 90° , $AC = 4,8$, $\sin A = \frac{7}{25}$. Найдите AB .



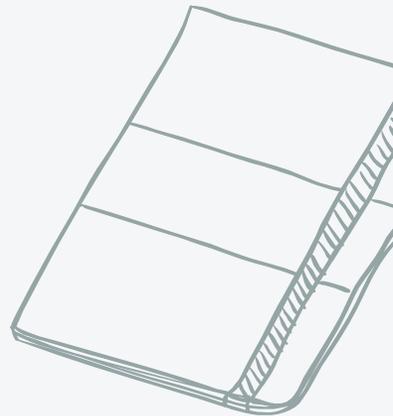
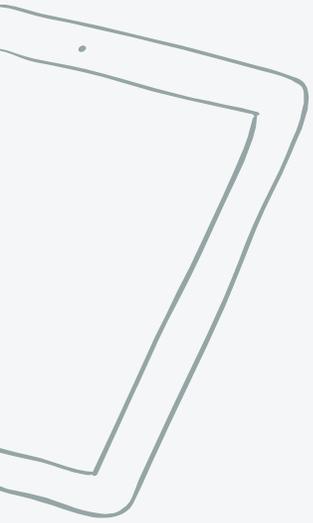


В треугольнике ABC угол C равен 90° , CH – высота, $AC = 3$, $\cos A = \frac{1}{6}$. Найдите BH .



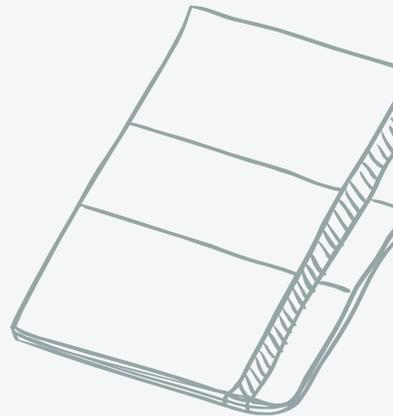
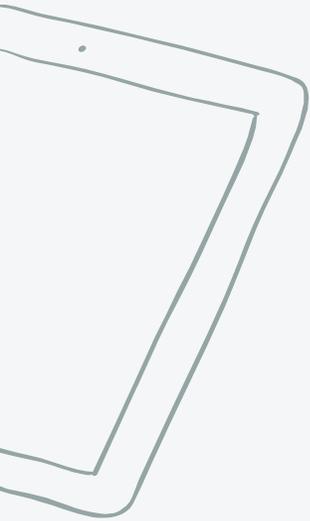
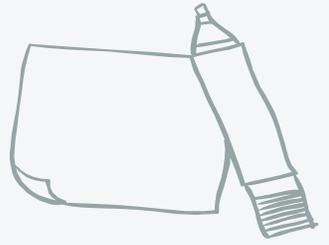


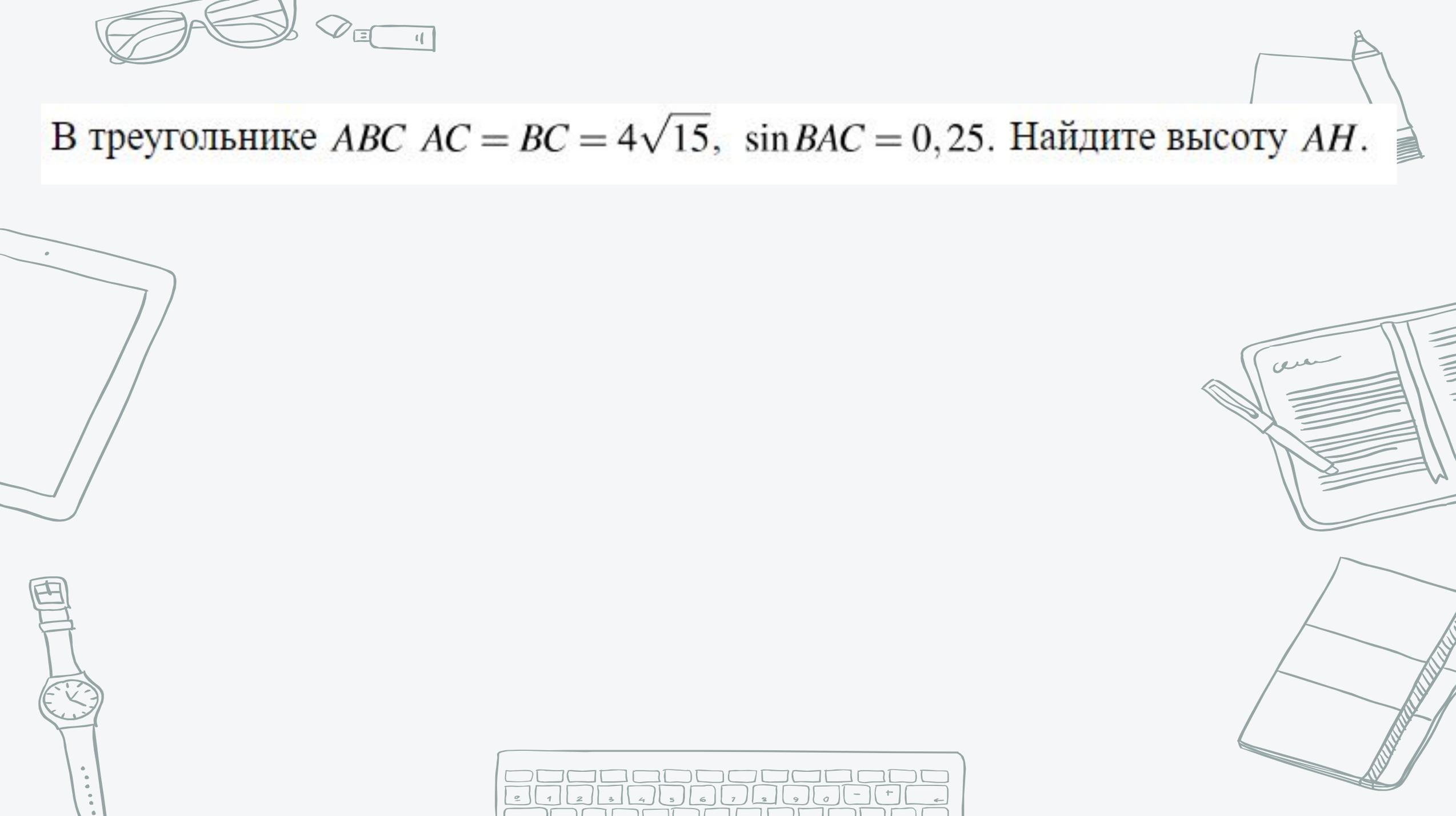
В треугольнике ABC угол C равен 90° , CH – высота, угол A равен 30° , $AB = 4$. Найдите BH .



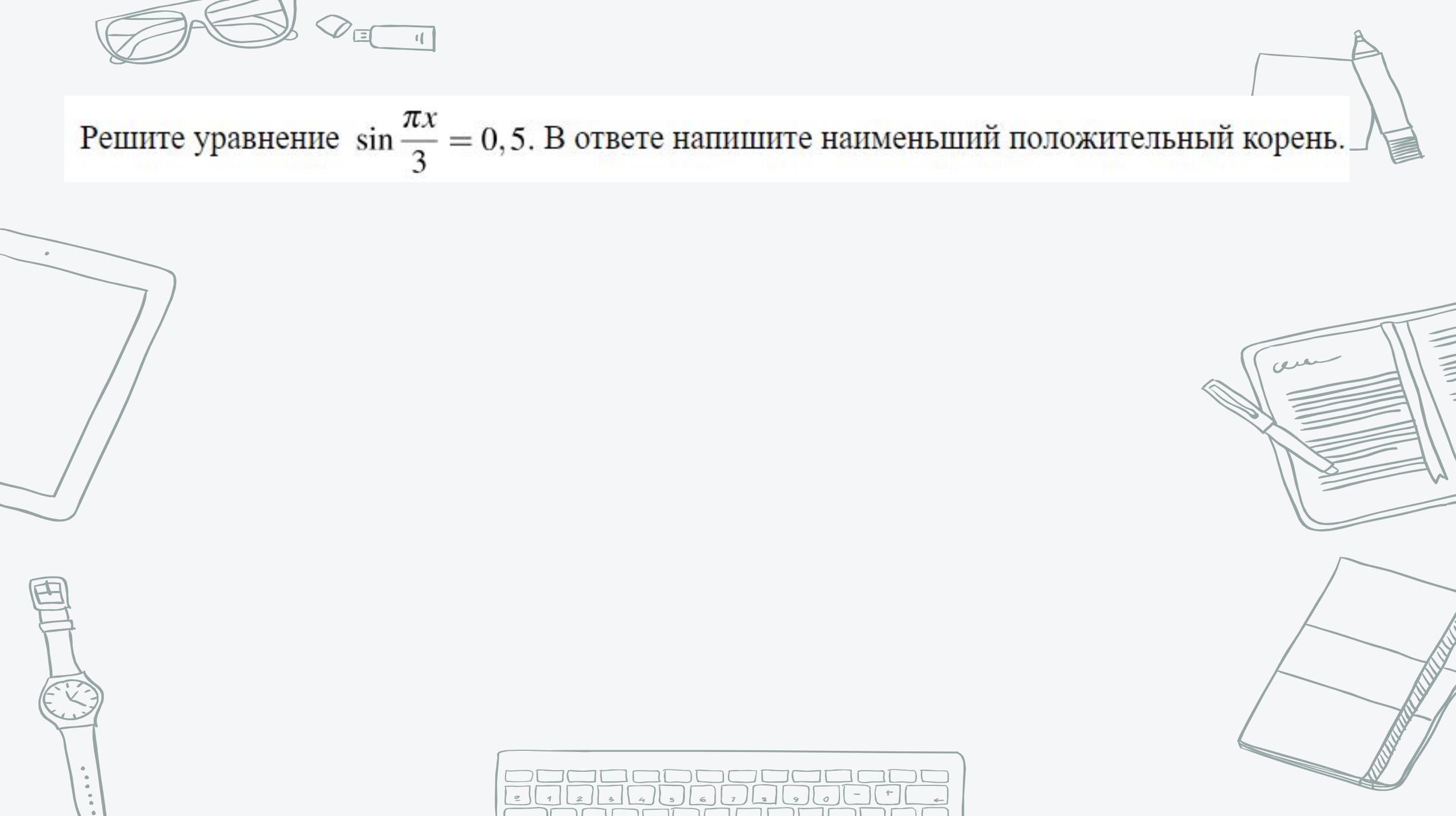


В треугольнике ABC $AC = BC = 8$, $\cos A = 0,5$. Найдите AB .

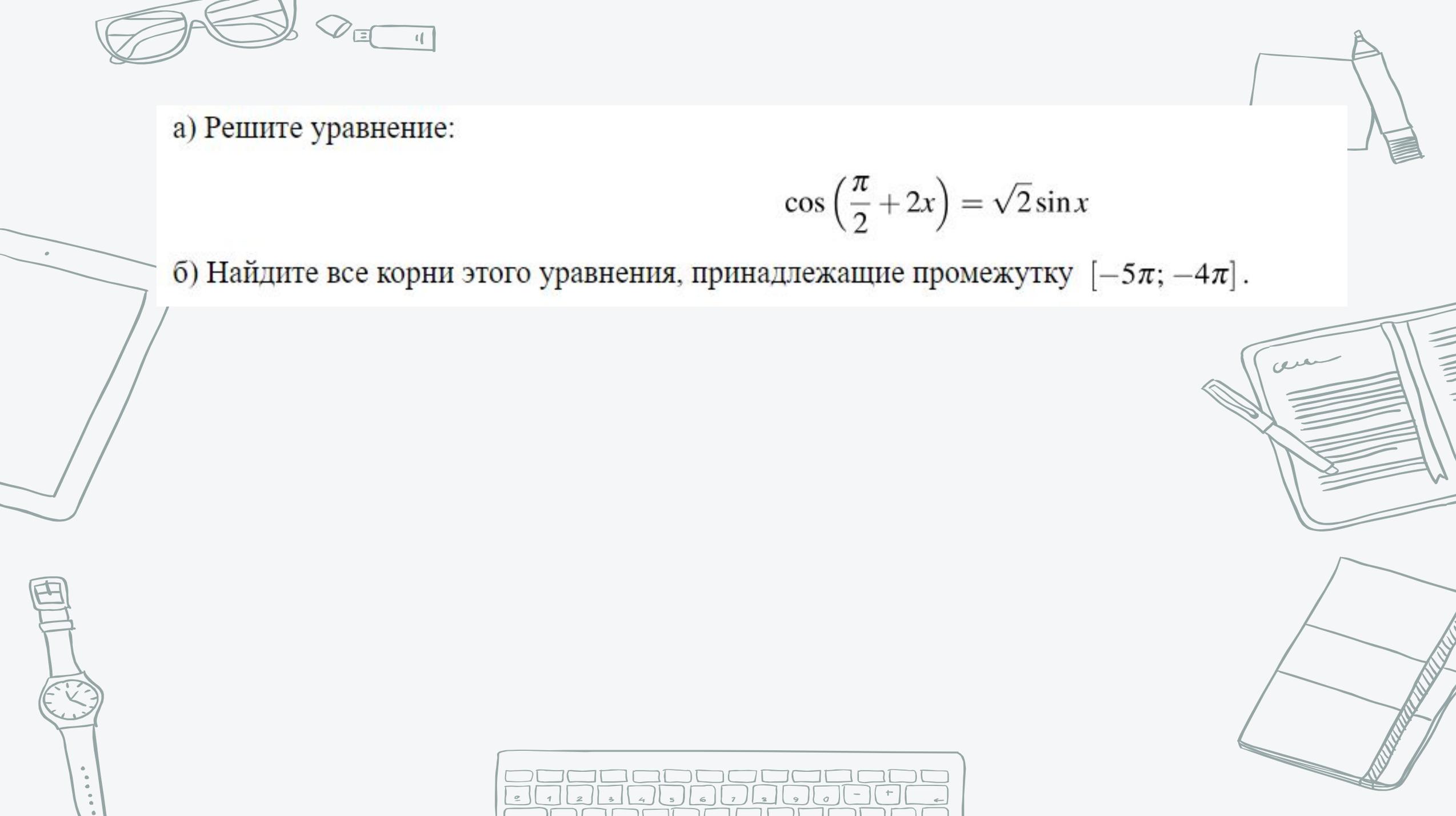




В треугольнике ABC $AC = BC = 4\sqrt{15}$, $\sin BAC = 0,25$. Найдите высоту AH .



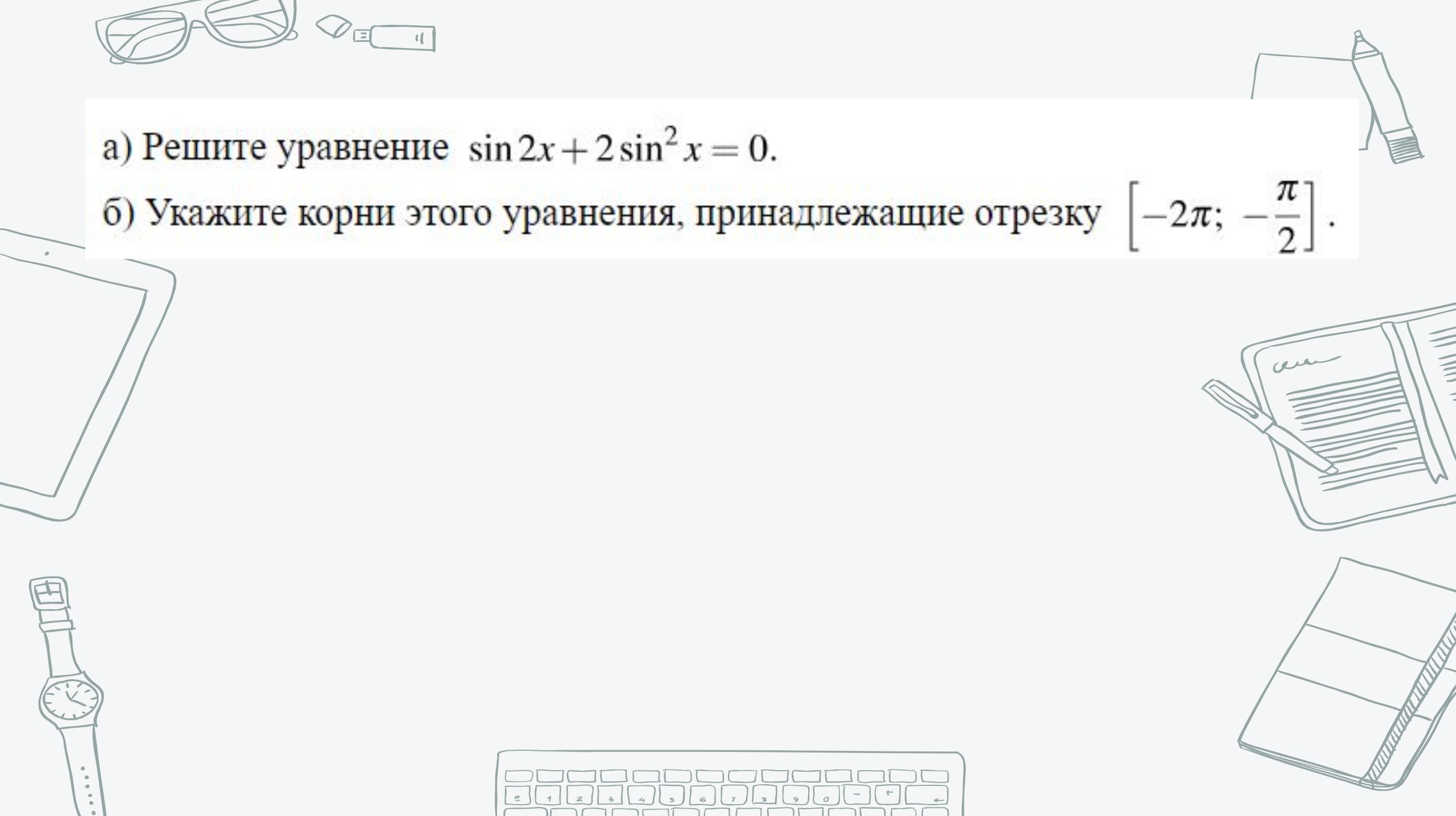
Решите уравнение $\sin \frac{\pi x}{3} = 0,5$. В ответе напишите наименьший положительный корень.



а) Решите уравнение:

$$\cos\left(\frac{\pi}{2} + 2x\right) = \sqrt{2} \sin x$$

б) Найдите все корни этого уравнения, принадлежащие промежутку $[-5\pi; -4\pi]$.



а) Решите уравнение $\sin 2x + 2 \sin^2 x = 0$.

б) Укажите корни этого уравнения, принадлежащие отрезку $\left[-2\pi; -\frac{\pi}{2}\right]$.