

## Решить простейшие тригонометрические уравнения

	<i>a)</i>	<i>b)</i>	<i>c)</i>	<i>d)</i>	<i>e)</i>
1	$2 \cos x + \sqrt{3} = 0$	$\operatorname{tg}\left(x - \frac{\pi}{4}\right) = -1$	$\operatorname{ctg}\left(\frac{x}{3} + \frac{\pi}{4}\right) = 4$	$2 \sin(2\pi - 0,5x) = -1$	$\operatorname{tg}^2 2x = 1$
2	$2 \cos x + \sqrt{2} = 0$	$\operatorname{tg}\left(x - \frac{\pi}{4}\right) = -\sqrt{3}$	$\sin\left(\frac{x}{3} - \frac{\pi}{6}\right) + 1 = 0$	$\sqrt{3} \operatorname{ctg} x + 1 = 0$	$2 \sin x \cdot \cos\left(\frac{3\pi}{2} + x\right) = 1$
3	$2 \cos x - 1 = 0$	$\operatorname{tg}\left(x - \frac{\pi}{6}\right) = -\frac{1}{\sqrt{3}}$	$\sin\left(2x - \frac{\pi}{6}\right) = 0$	$\operatorname{ctg}(x + 3\pi) = 1,5$	$ \sin 3x  = \frac{1}{2}$
4	$2 \cos x + 1 = 0$	$\operatorname{tg} 3x - 1 = 0$	$\operatorname{ctg}\left(\frac{\pi}{6} - x\right) = -\sqrt{3}$	$\sin\left(\frac{\pi}{6} - 3x\right) = -1$	$2 \sin x \cdot \cos\left(\frac{\pi}{2} - x\right) = 1$
5	$\sqrt{2} \sin x + 1 = 0$	$\operatorname{tg} \frac{x}{2} - \sqrt{3} = 0$	$2 \cos\left(\frac{\pi}{4} - 3x\right) = -\sqrt{2}$	$\operatorname{ctg}\left(\frac{x}{3} + \frac{2\pi}{3}\right) = 1$	$ \cos 2x  = 1$
6	$2 \sin x - 1 = 0$	$\operatorname{ctg}\left(\frac{\pi}{6} - x\right) = \frac{\sqrt{3}}{3}$	$\cos\left(\frac{\pi}{6} - 3x\right) = -1$	$\operatorname{tg} x + \sqrt{3} = 0$	$\operatorname{ctg}^2 2x = 1$
7	$2 \sin x + \sqrt{3} = 0$	$2 \cos\left(x - \frac{\pi}{3}\right) - 1 = 0$	$\operatorname{ctg}(x - 3\pi) = 6$	$\operatorname{tg}\left(x + \frac{\pi}{4}\right) = -\frac{\sqrt{3}}{3}$	$ \sin 2x  = 1$
8	$2 \sin x + \sqrt{2} = 0$	$\sqrt{2} \cos\left(\frac{\pi}{4} - x\right) = 1$	$\sqrt{3} \operatorname{tg} x - 1 = 0$	$\operatorname{ctg}(x + \pi) = -0,25$	$\operatorname{tg}^2 4x = 3$
9	$\sqrt{3} \operatorname{ctg} x - 1 = 0$	$\operatorname{tg}(-4x) = \frac{1}{\sqrt{3}}$	$2 \cos\left(\frac{x}{2} - \frac{\pi}{3}\right) = \sqrt{3}$	$\sin\left(\frac{x}{3} + \frac{2\pi}{3}\right) = 1$	$2 \cos x \cdot \sin\left(\frac{\pi}{2} - x\right) = 1$
10	$2 \cos x - \sqrt{3} = 0$	$\operatorname{ctg}\left(-\frac{x}{2}\right) = 1$	$\operatorname{tg}(x + \pi) = 0,25$	$2 \sin\left(\frac{x}{4} - \frac{\pi}{6}\right) = -\sqrt{3}$	$ \cos 3x  = \frac{1}{2}$
11	$2 \cos x - \sqrt{2} = 0$	$\sqrt{3} \operatorname{tg}\left(\frac{x}{3} + \frac{\pi}{6}\right) = 3$	$\operatorname{ctg}\left(\frac{x}{2} + \frac{2\pi}{3}\right) = -1$	$-2 \sin\left(x + \frac{\pi}{4}\right) = \sqrt{2}$	$\sin^2\left(x - \frac{\pi}{2}\right) = 1$
12	$\sqrt{2} \sin x - 1 = 0$	$\operatorname{tg}\left(\frac{\pi}{4} - \frac{x}{2}\right) = -1$	$2 \cos\left(\frac{x}{4} - \frac{\pi}{6}\right) = -\sqrt{3}$	$\operatorname{ctg}\left(x - \frac{\pi}{6}\right) = -\frac{\sqrt{3}}{3}$	$ \operatorname{tg} 0,5x  = \frac{1}{2}$
13	$\operatorname{ctg} x + 1 = 0$	$\sqrt{3} \operatorname{tg}\left(\frac{x}{3} + \frac{\pi}{6}\right) = -3$	$2 \sin(5\pi + 1,5x) = \sqrt{3}$	$\cos\left(\frac{x}{2} + \frac{2\pi}{3}\right) = -1$	$\cos^2\left(\frac{\pi}{2} + x\right) = 1$
14	$2 \sin x - \sqrt{3} = 0$	$\operatorname{tg}(-2x) = -\frac{1}{\sqrt{3}}$	$-2 \cos\left(\frac{\pi}{4} - x\right) = \sqrt{2}$	$\operatorname{ctg}\left(\frac{x}{4} + \frac{\pi}{6}\right) = -3$	$ \cos 5x  = \frac{1}{4}$

15	$2 \sin x - \sqrt{2} = 0$	$2 \cos\left(\frac{x}{2} - \frac{\pi}{6}\right) = \sqrt{3}$	$\operatorname{ctg}\left(\frac{x}{3} + \frac{\pi}{8}\right) = 3$	$\operatorname{tg}(\pi + x) = 0,5$	$2 \sin x \cdot \cos\left(\frac{5\pi}{2} + x\right) = -1$
16	$\operatorname{tg}x + 1 = 0$	$2 \sin\left(3x - \frac{\pi}{4}\right) = -\sqrt{2}$	$\cos(3\pi + 0,5x) - 1 = 0$	$\operatorname{ctg}\left(\frac{3\pi}{4} - \frac{x}{3}\right) = -\sqrt{3}$	$ \operatorname{tg} 0,5x  = \frac{1}{4}$
17	$\operatorname{tg}x - \sqrt{3} = 0$	$\cos\left(\frac{\pi}{6} - 2x\right) = -1$	$2 \sin\left(x + \frac{\pi}{4}\right) = \sqrt{2}$	$\operatorname{ctg}\left(0,5x + \frac{\pi}{6}\right) = \frac{\sqrt{3}}{3}$	$\cos^2\left(\frac{\pi}{2} - x\right) = 1$
18	$\sqrt{3}\operatorname{tg}x + 1 = 0$	$2 \sin\left(\frac{\pi}{3} - \frac{x}{4}\right) = \sqrt{3}$	$2 \cos 3x = \sqrt{2}$	$\operatorname{ctg} \frac{x}{6} = \frac{1}{2}$	$2 \cos x \cdot \sin\left(\frac{5\pi}{2} + x\right) = 1$
19	$\operatorname{ctg}x - 1 = 0$	$2 \cos\left(\frac{\pi}{4} - 3x\right) = \sqrt{2}$	$\operatorname{tg}(\pi + 0,5x) = -2$	$2 \sin(2\pi + 2,5x) = \sqrt{3}$	$\sin^2\left(x - \frac{\pi}{2}\right) = \frac{1}{2}$
20	$\sqrt{3}\operatorname{ctg}x + 1 = 0$	$\cos\left(\frac{\pi}{6} + 2x\right) = -1$	$\sin 0,5x = -1$	$\operatorname{tg} 10x - 1 = 0$	$ \sin 0,5x  = \frac{1}{4}$
21	$3\operatorname{tg}x - \sqrt{3} = 0$	$\sin\left(\frac{x}{2} - \frac{\pi}{6}\right) + 1 = 0$	$\operatorname{ctg}(-x + 5\pi) + 1 = 0$	$-\sqrt{2} \cos\left(\frac{\pi}{4} + x\right) = 1$	$2 \sin x \cdot \cos\left(\frac{\pi}{2} - x\right) = 1$
22	$3\operatorname{tg}x + \sqrt{3} = 0$	$\operatorname{ctg}\left(\frac{\pi}{6} - x\right) = \sqrt{3}$	$2 \sin(5\pi - 1,5x) = \sqrt{3}$	$2\sqrt{3} \cos\left(\frac{x}{3} + \frac{\pi}{6}\right) = 3$	$\cos^2\left(\frac{\pi}{2} + x\right) = \frac{1}{2}$
23	$3\operatorname{tg}x - 1 = 0$	$2 \sin\left(\frac{\pi}{6} - x\right) = 1$	$\operatorname{ctg}(x - 3\pi) = 4$	$-\cos\left(\frac{x}{2} - \frac{2\pi}{3}\right) = 1$	$ \cos 0,5x  = \frac{1}{4}$
24	$3\operatorname{tg} 2x + \sqrt{3} = 0$	$\cos\left(x - \frac{\pi}{3}\right) = \frac{1}{2}$	$-4 \sin 2x + 2 = 0$	$\operatorname{ctg}\left(-\frac{x}{9}\right) = -1$	$\operatorname{tg}^2 3x = 2$
25	$\operatorname{tg}(\pi + 0,5x) = -1$	$\cos 2x - 1 = 0$	$2 \sin(\pi + 1,5x) = \sqrt{3}$	$2\sqrt{3} \cos\left(\frac{x}{6} + \frac{\pi}{3}\right) = 3$	$\operatorname{ctg}^2 4x = 4$
26	$\cos 2x - 1 = 0$	$\operatorname{tg}(\pi + x) = 0,5$	$\operatorname{tg} 10x - 1 = 0$	$\sin\left(\frac{\pi}{6} - 3x\right) = -\frac{1}{2}$	$ \cos 3x  = \frac{\sqrt{3}}{2}$
27	$2 \sin x + \sqrt{3} = 0$	$2 \cos\left(x - \frac{\pi}{3}\right) - 1 = 0$	$\operatorname{ctg}\left(x - \frac{3\pi}{2}\right) = 6$	$\operatorname{tg}\left(x + \frac{\pi}{6}\right) = -\frac{\sqrt{3}}{3}$	$ \sin 3x  = 1$
28	$2 \cos x + \sqrt{2} = 0$	$\operatorname{tg}\left(x - \frac{\pi}{6}\right) = -\frac{1}{\sqrt{3}}$	$\operatorname{ctg}\left(\frac{\pi}{6} - x\right) = -\sqrt{3}$	$2 \sin\left(\frac{x}{4} - \frac{\pi}{6}\right) = -\sqrt{3}$	$ \sin 0,5x  = \frac{1}{2}$