

1. Решите уравнение $\cos 2x = \frac{1}{2}$.

- 1) $\frac{\pi}{6} + \pi k$ 2) $\frac{\pi}{2} + \pi k$ 3) $\frac{\pi}{3} + \pi k$ 4) $\frac{\pi}{6} + 2\pi k$
5) $-\frac{\pi}{6} + \pi k$ 6) $-\frac{\pi}{6} + 2\pi k$

2. Решите уравнение $\sin 3x = \frac{\sqrt{3}}{2}$.

- 1) $-\frac{\pi}{9} + \frac{4\pi k}{3}$ 2) $\frac{\pi}{9} + \frac{2\pi k}{3}$ 3) $\frac{2\pi}{9} + \frac{2\pi k}{3}$ 4) $-\frac{\pi}{6} + \frac{2\pi k}{3}$
5) $-\frac{\pi}{9} + \frac{2\pi k}{3}$ 6) $-\frac{\pi}{3} + \frac{2\pi k}{3}$

3. Решите уравнение $\sin \frac{5x}{4} = -\frac{\sqrt{2}}{2}$.

- 1) $\frac{3\pi}{5} + \frac{4\pi k}{5}$ 2) $\frac{2\pi}{5} + \frac{8\pi k}{5}$ 3) $\frac{\pi}{5} + \frac{8\pi k}{5}$ 4) $-\frac{\pi}{5} + \frac{8\pi k}{5}$
5) $-\frac{3\pi}{5} + \frac{8\pi k}{5}$ 6) $\frac{3\pi}{5} + \frac{8\pi k}{5}$

4. Решите уравнение $\cos \frac{5x}{3} = -\frac{1}{2}$.

- 1) $\frac{2\pi}{5} + \frac{6\pi k}{5}$ 2) $\frac{\pi}{5} + \frac{6\pi k}{5}$ 3) $-\frac{\pi}{5} + \frac{6\pi k}{5}$ 4) $\frac{2\pi}{5} + \frac{3\pi k}{5}$
5) $-\frac{2\pi}{5} + \frac{3\pi k}{5}$ 6) $-\frac{2\pi}{5} + \frac{6\pi k}{5}$

5. Решите уравнение $\operatorname{ctg} 2x = -\frac{1}{\sqrt{3}}$.

- 1) $\frac{\pi}{3} + \frac{4\pi k}{3}$ 2) $-\frac{\pi}{6} + \frac{\pi k}{2}$ 3) $\frac{\pi}{4} + \frac{\pi k}{2}$ 4) $\frac{\pi}{3} + \frac{\pi k}{2}$
5) $\frac{4\pi}{3} + \frac{\pi k}{2}$ 6) $-\frac{\pi}{3} + \frac{\pi k}{2}$

6. Решите уравнение $\operatorname{tg} 3x = -1$.

- 1) $-\frac{\pi}{4} + \frac{\pi k}{2}$ 2) $-\frac{\pi}{12} + \frac{\pi k}{3}$ 3) $\frac{\pi}{12} + \frac{\pi k}{3}$ 4) $\frac{\pi}{4} + \frac{\pi k}{3}$
5) $-\frac{\pi}{8} + \frac{\pi k}{3}$ 6) $-\frac{\pi}{12} + \frac{\pi k}{2}$

7. Решите уравнение $\sin(\pi(x-2)) = 0$.

- 1) $\{0; 1; 2; 3; 4; 5\}$ 2) $\{1; 2; 3; 4; 5; 6\}$
3) $\{0; 1; 2; 3; 4; 5; 6; 7\}$ 4) $\{2; 3; 4; 5; 6\}$
5) $\{0; 1; 2; 3; 4; 5; 6\}$ 6) $\{0; 1; 2; 3; 4\}$

8. Решите уравнение $\cos(\pi(x-3)) = 1$.

- 1) 1 2) 2 3) 3 4) 4 5) 5 6) 6

9. Решите уравнение $1 - 2 \sin \frac{4\pi x}{3} = 0$.

- 1) $\left\{ \frac{1}{8}; \frac{5}{8}; \frac{13}{8}; \frac{17}{8}; \frac{25}{8}; \frac{27}{8}; \frac{37}{8}; \frac{41}{8}; \frac{49}{8} \right\}$
2) $\left\{ \frac{1}{8}; \frac{5}{8}; \frac{13}{8}; \frac{17}{8}; \frac{25}{8}; \frac{29}{8}; \frac{35}{8}; \frac{41}{8}; \frac{49}{8} \right\}$
3) $\left\{ \frac{1}{8}; \frac{5}{8}; \frac{13}{8}; \frac{17}{8}; \frac{25}{8}; \frac{29}{8}; \frac{37}{8}; \frac{41}{8}; \frac{49}{8} \right\}$
4) $\left\{ \frac{1}{8}; \frac{5}{8}; \frac{13}{8}; \frac{17}{8}; \frac{25}{8}; \frac{29}{8}; \frac{37}{8}; \frac{43}{8}; \frac{49}{8} \right\}$
5) $\left\{ \frac{1}{8}; \frac{5}{8}; \frac{13}{8}; \frac{17}{8}; \frac{25}{8}; \frac{29}{8}; \frac{35}{8}; \frac{41}{8}; \frac{47}{8} \right\}$

$$6) \left\{ \frac{1}{8}; \frac{5}{8}; \frac{13}{8}; \frac{17}{8}; \frac{23}{8}; \frac{29}{8}; \frac{39}{8}; \frac{41}{8}; \frac{49}{8} \right\}$$

10. Решите уравнение $1 - \sqrt{2} \cos \frac{3\pi x}{4} = 0$.

1) $\frac{1}{3}$ 2) $\frac{2}{3}$ 3) $\frac{7}{3}$ 4) $\frac{5}{3}$ 5) $\frac{8}{3}$ 6) $-\frac{1}{3}$

11. Решите уравнение $tg\left(\frac{\pi}{4}(x-3)\right) = 1$.

1) 20 2) 16 3) 0 4) 4 5) 24 6) 8

12. Решите уравнение $ctg\left(\frac{\pi}{4}(x-1)\right) = 1$.

1) 2 2) 8 3) 1 4) 4 5) 6 6) 3