

Oldjuk meg a következő egyenleteket a valós számok halmazán!

1. $8 \cos^4 x = 11 \cos 2x - 5$
2. $8 \sin^4 x + 13 \cos 2x = 7$
3. $\cos\left(\frac{\pi}{2} - 4x\right) - \sin 2x = 0$
4. $\sin\left(\frac{5\pi}{2} + 2x\right) - \cos 6x = 0$
5. $\cos 4x = \sin 2x$
6. $(\sin x + \sqrt{3} \cos x)^2 = 5 + \cos\left(\frac{\pi}{6} - x\right)$
7. $\cos x \cos 2x - \sin x \sin 2x = 1$
8. $\cos \frac{\pi}{6} \sin 4x + \sin \frac{\pi}{6} \cos 4x = -1$
9. $\sin 7x \cos x - \sin 6x = 0$
10. $\sin 3x + \sin 7x = 2 \sin 5x$
11. $\sin x - \sin 3x = \sin 4x - \sin 2x$
12. $\cos 8x - \cos 4x = 4 \sin 6x$
13. $\sin x + \cos x + \sin 3x + \cos 3x = 0$
14. $\sin^2 x + \sin^2 2x = 1$
15. $\cos^2 4x + \sin^2 3x = 1$
16. $\sin^2 2x + \sin^2 3x + \sin^2 4x + \sin^2 5x = 2$
17. $\sin^2 3x + \sin^2(81\pi - x) = 1,5 - \sin^2 2x$
18. $\sin 3x \cos x = \sin 5x \cos 3x$
19. $\sin 2x \cos 5x = \sin 3x \cos 4x$
20. $\sin^4 2x + \cos^4 2x = \sin 2x \cos 2x$
21. $\sin^2 x - \cos^4 x = \sin 4x$
22. $\cos 2x = \cos x - \sin x$
23. $\cos 2x = \cos x + \sin x$
24. $(\cos 3x + \sin 3x)^2 = 1 + \sin 2x$
25. $2 \cos x + \sin x = 1 + \sin 2x$
26. $2 \cos^2 x - 1 = \sin 4x$
27. $\operatorname{tg} 6x = \sin^2 x \cdot \operatorname{tg} 6x$
28. $\sin^3 x - \sin^2 x - \sin^2 x \cos^2 x = 0$

29. $3 \cos^2 x - \sin 2x - \sin^2 x = 0$
30. $10 \sin^2 x + 5 \sin x \cos x + \cos^2 x = 3$
31. $2 \sin 4x - 3 \sin^2 2x = 1$
32. $8 \sin x \cdot \cos x \cdot \cos 2x = -1$
33. $\cos^2 x - (1 + \sqrt{3}) \cos x \cos \left(\frac{3\pi}{2} + x\right) + \sqrt{3} \sin^2 (\pi + x) = 0$
34. $\sin \frac{x}{2} \cdot \cos \frac{x}{2} \cdot \cos x + 0,25 = 0$
35. $16 \sin x \cos x \cos 2x \cos 4x + \sqrt{2} = 0$
36. $8 \sin x \cos x (\sin x - \cos x) (\cos x + \sin x) = \sqrt{3}$
37. $\sin 2x = \cos^4 \frac{x}{2} - \sin^4 \frac{x}{2}$
38. $(\sin^2 x - \cos^2 x)^2 - 4 \sin^2 x \cos^2 x + \frac{\sqrt{2}}{2} = 0$
39. $\sin 2x + \operatorname{tg} x = 2$
40. $3 \sin x (\cos x + \sin x) - 3 = \sin^2 x (\operatorname{tg} x - 1)$
41. $\sin 2x \sin 6x = 1$
42. $\sin^4 x + \cos^3 x = 1$
43. $\operatorname{tg} x \cos 5x + \sin 5x - \sin 6x = 0$
44. $\operatorname{ctg} 2x \cos x + \sin x - \cos x = 0$
45. $7 \operatorname{tg} x + \cos^2 x + 3 \sin 2x = 1$
46. $2 \sin 2x + \cos^2 x = 1 + 9 \operatorname{tg} x$
47. $\sin^2 x - 3 \operatorname{ctg} x = 1 + 2 \sin 2x$
48. $12 \operatorname{ctg} x - 2 \sin 2x = 1 + \cos 2x$
49. $\cos \pi x + x^2 - 6x + 10 = 0$
50. $\sin^2 x + 3x^2 \cos x + 3x^2 = 0$
51. $\sqrt{1 + \cos 4x} \sin x = 2 \sin \frac{3\pi}{4}$
52. $\sqrt{1 + \cos 6x} \sin \frac{3x}{2} = 2\sqrt{2} \cos \frac{4\pi}{3}$
53. $\sqrt{1 - \sqrt{3} \sin x} = -\sqrt{10} \cos x$
54. $\sqrt{\cos 2x} = 1 + 2 \sin x$
55. $\sqrt{6(1 - \operatorname{tg}^2 x)} = 4 \sin x$
56. $2\sqrt[4]{2} \cos \left(\frac{3\pi}{2} - x\right) = \sqrt{1 - \operatorname{tg}^2 x}$

$$57. (1 + 2 \sin x) \sqrt{\cos \left(\frac{\pi}{4} + x \right)} = 0$$

$$58. \sqrt{1 - \cos 2x} = \sin 2x$$

$$59. \frac{2 \cos x - \sqrt{3}}{1 - \sin x} = 0$$

$$60. \frac{\sqrt{2} \sin x - 1}{\sqrt{2} - 2 \cos x} = 0$$

$$61. \left(1 - \frac{1}{\sin x} \right) (\cos x - 1) = 0$$

$$62. (1 + \cos x) \cdot \operatorname{tg} \frac{x}{2} = 0$$

$$63. 1 + 2 |\sin x| = 2 \cos 2x$$

$$64. \frac{|\sin x|}{\sin x} = 1 - \cos 2x$$

$$65. 2 \sin \left(x + \frac{\pi}{6} \right) + \sqrt{3} \sin x + |\cos x| = 0$$

$$66. \sqrt{2} \cos \left(x + \frac{\pi}{4} \right) - \sin x - |\cos x| = 0$$

$$67. \log_3 \sin 2x = \log_3 (-\sin x)$$

$$68. \operatorname{lg} \sin 2x = \operatorname{lg} (-\cos x)$$

$$69. \operatorname{lg} \cos 2x = \operatorname{lg} \cos x$$

$$70. \log_{\frac{1}{10}} (\sqrt{3} \sin x) = \log_{\frac{1}{10}} \sin 2x$$

$$71. 2 \cos^2 x = 1 + 5^{\log_5 \cos x}$$

$$72. \sin^2 x = \frac{1}{16} - \frac{3}{8} \cdot 10^{\operatorname{lg} \sin x}$$

$$73. \cos^2 x - 0,25 \cdot 4^{\log_4 \cos x} = 0,125$$

$$74. \sin^2 x - \frac{1}{3} + \frac{1}{6} \cdot 12^{\log_{12} \sin x} = 0$$

$$75. (1 - \sin \pi x) \log_7 (5 - x^2) = 0$$

$$76. \left(2 \sin \pi x - \frac{\pi^2}{16} \right) \log_{0,4} (3 - x^2) = 0$$

$$77. \left(\frac{1}{\sin^2 x} - 1 \right) \sqrt{4 - x^2} = 0$$

$$78. \left(2 \cos^2 \frac{x}{2} - 1 \right) \sqrt{25 - 4x^2} = 0$$

$$79. (\cos x - 1 - \sin^2 x) \sqrt{4 - x^2} = 0$$

$$80. (2 \cos^2 2x + 3 \sin 2x - 2) \sqrt{9 - x^2} = 0$$

$$81. (16^{\cos^2 x} - 8) \sqrt{-x^2 + 7x - 10} = 0$$

$$82. (25^{\cos^2 x} - \sqrt{5}) \sqrt{7x - x^2 - 6} = 0$$