Задание №13

Решите уравнение и отберите его корни на промежутке...

ТИП #1

1. $\log_4\left(2^{2x}-\sqrt{3}\cos x-\sin 2x\right)=x$ $\left[-\frac{\pi}{2};\frac{3\pi}{2}\right]$

2. $\log_9\left(3^{2x}+5\sqrt{2}\cdot\sin x-6\cdot\cos^2 x-2\right)=x$ $\left[-2\pi;-\frac{\pi}{2}\right]$

3. $\log_4(2^{2x}-\sqrt{3}\cos x-6\sin^2 x)=x$ $\left[\frac{5\pi}{2};4\pi\right]$

ТИП #2

4. $25^{\sqrt{3}\cos(x+\frac{3\pi}{2})}=(\frac{1}{5})^{2\cos(x+\pi)}$

5. $2^{4\sqrt{3}\sin x}=2^{-4\sin(2x)}$

6. $\left(\frac{1}{9}\right)^{\cos(\frac{\pi}{2}-x)}=3^{2\sin(x+\frac{\pi}{2})}$; $[-\frac{7\pi}{2};-2\pi]$

7. $25^{\sqrt{3}\cdot\cos(\frac{3\pi}{2}+x)}=\left(\frac{1}{5}\right)^{\cos(\pi-x)}$

8. $49^{\sin x}=\left(\frac{1}{7}\right)^{-\sqrt{2}\cdot\sin(2x)}$; $[2\pi;\frac{7\pi}{2}]$

9. $\left(\dfrac{1}{49}\right)^{\cos x} = 7^{\sqrt{2}\cdot\sin(2x)}$; $[-2\pi; -\dfrac{\pi}{2}]$

10. $\left(\dfrac{1}{125}\right)^{-\cos x} = 5^{\sqrt{3}\sin 2x}$; $[-\dfrac{5\pi}{2}; -\pi]$

11. $\left(\dfrac{1}{49}\right)^{\sin(x+\pi)} = 7^{2\sqrt{3}\cdot\sin(\frac{\pi}{2}-x)}$ $\left[3\pi; \dfrac{9\pi}{2}\right]$

12. $\left(\dfrac{1}{4}\right)^{\sin(x+\pi)} = 2^{2\sqrt{3}\cdot\sin\left(\frac{\pi}{2}-x\right)}$; $\left[-\dfrac{9\pi}{2}; -3\pi\right]$

13. $\left(\dfrac{1}{16}\right)^{\sin(\pi+x)} = 4^{2\sqrt{3}\cdot\sin\left(\frac{\pi}{2}-x\right)}$

14. $25^{\sin x} = \left(\dfrac{1}{5}\right)^{-\sqrt{2}\cdot\sin 2x}$ $\left[2\pi; \dfrac{7\pi}{2}\right]$

15. $\left(\dfrac{1}{81}\right)^{\cos x} = 9^{\sqrt{2}\cdot\sin 2x}$

ТИП #3

16. $\log_8(7\sqrt{3}\sin x - \cos(2x) - 10) = 0$; $[\dfrac{3\pi}{2}; 3\pi]$

17. $\log_{13}(\cos 2x - 9\sqrt{2}\cos x - 8) = 0$ $\left[-2\pi; -\dfrac{\pi}{2}\right]$

ТИП #4

18. $$8 \cdot 16^{\cos x} - 6 \cdot 4^{\cos x} + 1 = 0 \qquad \left[\frac{3\pi}{2}; 3\pi\right]$$

19. $$16^{\sin x} - 6 \cdot 4^{\sin x} + 8 = 0 \qquad \left[\frac{5\pi}{2}; 4\pi\right]$$

20. $$9 \cdot 81^{\cos x} - 28 \cdot 9^{\cos x} + 3 = 0 \qquad \left[\frac{5\pi}{2}; 4\pi\right]$$

21. $$81^{\cos x} - 12 \cdot 9^{\cos x} + 27 = 0$$

22. $$4 \cdot 4^{2\sin x} - 9 \cdot 4^{\sin x} + 2 = 0 \qquad \left[\frac{5\pi}{2}; 4\pi\right]$$

ТИП #5

23. $$6\log_8^2(\cos x) - 5\log_8(\cos x) - 1 = 0 \qquad \left[\frac{5\pi}{4}; 4\pi\right]$$

24. $$4\log_9^2(2\sin x) - 5\log_9(2\sin x) + 1 = 0; \ [2\pi; \frac{7\pi}{2}]$$

25. $$3\log_8^2(\sin x) - 5\log_8(\sin x) - 2 = 0 \qquad [-\frac{7\pi}{2}; -2\pi]$$

26. $$2\log_4^2(\cos x) - 7\log_4(cosx) + 4 = 0; \ [2\pi; \frac{7\pi}{2}]$$

27. $$2\log_3^2(2\cos x) - 7\log_3(2\cos x) + 3 = 0 \quad \left[-3\pi; -\frac{3\pi}{2}\right]$$

28. $2\log_2^2(2\sin x) - 7\log_2(2\sin x) + 3 = 0$ $\left[\frac{\pi}{2}; 2\pi\right]$

ТИП #6

29. $16^{\sin x} + 16^{\sin(x+\pi)} = \frac{17}{4}$

30. $9^{\sin x} + 9^{\sin(\pi+x)} = \frac{10}{3};\ x \in [-\frac{7\pi}{2}; -2\pi]$

31. $4^{\sin x} + 4^{\sin(\pi+x)} = \frac{5}{2};\ \ [\frac{5\pi}{2}; 4\pi]$