Решите уравнение:

1. $\dfrac{x^2+1}{x-4} - \dfrac{x^2-1}{x+3} = 23$

2. $7 \cdot 5^x = 5 \cdot 7^x$

3. $\dfrac{5^{x+25}}{19} = \dfrac{5}{19^{x+25}}$

4. $7^{x+2} + 4 \cdot 7^{x+1} = 539$

5. $x \cdot 2^x + 3 = 3 \cdot 2^x + x$

6. $3^{2x+1} - 26 \cdot 3^x - 9 = 0$

7. $(2x-3) \cdot 5^{3x-2} = 2x - 3$

8. $4^x - 10 \cdot 2^{x-1} - 24 = 0$

9. $4^{2/x} - 5 \cdot 4^{1/x} + 4 = 0$

10. $\log_{4-x}(2x^2 - 9x + 10) = 0$

11. $(x+1) \cdot \log_{x+2}(x+3) = 0$

12. $\log_{1-x}(x^2 - 5) = 1$

13. $(x^2 - 9) \cdot \lg(-x) = 0$

14. $2\log_x 27 - 3\log_2 7x = 1$

15. $9^{\log_{1/3}(x+1)} = 5^{\log_{1/5}(2x^2+1)}$