

Esercizi sulle disequazioni esponenziali

1) $16 \cdot 2^{\sqrt{x}+1} - 4 \cdot 4^{\sqrt{x}} - 15 \geq 0$

$$S = \left[0; \left(\log_2 \left(\frac{15}{2} \right) \right)^2 \right]$$

2) $\frac{4^x - 8}{9 - 3^x} \geq 0$

$$S = \left[\frac{3}{2}; 2 \right[$$

3) $\frac{2 \cdot 3^x - 9^x + 3}{x^2 - 1} \leq 0$

$$S =]-1; 1[\cup]1; +\infty[$$

4) $\frac{1}{3 \cdot 2^x - 2} - \frac{4}{2^x + 3} \geq 0$

$$S = \left] \log_2 \left(\frac{2}{3} \right); 0 \right]$$

5) $(5^{2x-1} - 1)(4^{2x} - 3 \cdot 4^x + 2) \leq 0$

$$S =]-\infty; 0] \cup \left\{ \frac{1}{2} \right\}$$

6) $\frac{49 - 7^{3x-2}}{7^{\sqrt{x-2}} - 7^{4-x}} \geq 0$

$$S = [2; 3[$$

7) $\frac{1 - \sqrt{2^{x-1}}}{3 - \sqrt[3]{9}} < 0$

$$S =]0; 1[\cup]2; +\infty[$$

8) $5(3^{2x} - 1)^4 - 2(3^{2x} - 1)^2 - 7 \leq 0$

$$S = \left] -\infty; \frac{1}{2} \left(1 + \log_3 \left(1 + \sqrt{\frac{7}{5}} \right) \right) \right]$$

9) $\left(\frac{4}{5} \right)^{7-3x} \leq \sqrt[3]{\frac{16}{25}}$

$$S =]-\infty; 0[\cup \left[\frac{1}{3}; 2 \right]$$

10) $\frac{5}{3^{3x}} < \frac{4^{1-x}}{\sqrt{5^x}}$

$$S = \left[\frac{\log_{10} 5 - \log_{10} 4}{\log_{10} 27 - \frac{1}{2} \log_{10} 5 - \log_{10} 4}; +\infty \right[$$