

EQUAZIONI ESPONENZIALI

Risolvere in \mathbb{R} le seguenti equazioni esponenziali.

$2^x = 64$	$\sqrt[x]{27} \cdot 3^x = 27 \cdot \sqrt{3}$	$4^{4-x} \cdot 4^{x+7} = 4^{x^2-4x-10}$	$3 \cdot 4^{2x^2-2x+4} - 5 \cdot 4^{2x^2-2x+4} = 28$
$4^x = \frac{1}{64}$	$3^{x^2-4x+5} = 3^{5-4x}$	$3^{x+1} + \frac{3^{2x-1}}{\sqrt{3^{2x-2}}} = 9 \cdot 2^x$	$\frac{3^{x-1}}{3} + \frac{3^{x+1}}{3} + 3^{x+2} - 3^{x+1} = 64$
$8^{2x} = \frac{1}{4}$	$17^{x^4-13x^2+36} = 1$	$(a^{-x})^{-x} = \left(\frac{1}{a}\right)^x$	$5^{x+4} - 5 \cdot 3^{x+4} = 5^{x+2} - 5 \cdot 5^{x+2}$
$\left(\frac{1}{6}\right)^{3x-7} = 6^{7x-3}$	$5^{1+x} + \frac{5}{5^x} = 26$	$2^{x+1} - 2^x - 2^{x-1} = 4$	$5^{2x} - 5^{x+1} = 5(5^{x-1} - 1)$
$2^{\frac{x+1}{2}} = 2^{2x}$	$\frac{2^{5x}}{4} = 8^{\frac{2x-1}{3}}$	$3^{x+2} + 3^{2-x} = 82$	$12^2 \cdot \left(\frac{4}{3}\right)^{-x} + 144 \cdot \left(\frac{4}{3}\right)^x = 337$

DISEQUAZIONI ESPONENZIALI

Risolvere le seguenti disequazioni esponenziali.

$3^{x+2} + 3^{2-x} < 30$	$4^x - 3 \cdot 2^2 + 2 < 0$	$2^{\sqrt{x^2-4}} \geq 0$
$\frac{e^x - e}{e^x + e} < 0$	$2^{x+1} + \frac{8}{2^x} \geq 17$	$\frac{2^x - 1}{8 - 2^x} \leq 0$
$\left(\frac{\sqrt{3}}{3}\right)^x < \frac{1}{9}$	$5^{2x} - 6 \cdot 5^x + 5 > 0$	$(x-2) \cdot 3^{x^2-4x} \leq 0$
$\frac{1}{2^{x^2}} < \frac{1}{4}$	$2\left(\frac{1}{2}\right)^x - 2^x \leq 1$	$4^{\frac{2}{x}} - 4^{\frac{1}{x}} + 1 > 0$

EQUAZIONI LOGARITMICHE

Risolvere le seguenti equazioni logaritmiche.

$\frac{1}{2} \log(3x+5) + \frac{1}{2} \log x = 1$	$\log 4x - \log(x+2) = \log(3x-2) - \log x$
$\log(x+1) = \log 2 - \log 3$	$\log(7-x) - \log(2x^2 - 11x) = -\log x$
$\frac{1}{3} \log(x^3 + 1) = \frac{1}{2} \log(x^2 + 1)$	$\log(x+1) + \log(x-3) = \log(1-2x) + \log(x+3)$
$2 + \log \frac{1}{100} + \log x = \frac{1}{2} \log(x+2)$	$\log(3x^2 + 7x + 4) - \log 2(x+1) = \log(3x^2 + 3x + 3) - \log 2x$
$2^{3x+1} = 3^{x-1}$	$\log_4 x = \frac{1}{2}$
$\sqrt{x^{\log \sqrt{x}}} = 10$	$\log \sqrt{x} = 1 - \log 5$

DISEQUAZIONI LOGARITMICHE

Risolvere le seguenti disequazioni logaritmiche.

$\log_{\sqrt[3]{5}} x < 6$	$\log_2(x+6) - 2 \log_2 x \geq 3 \log_8 2$	$\log_{\frac{1}{3}}(x^2 - 8) < 0$
$\log(x^2 - x - 1) > 0$	$(\log_2 x)^2 + 3 \log_2 x \geq \frac{5}{2} \log_{4\sqrt{2}} 19$	$20 \ln^2 x + 31 \ln x - 9 > 0$
$\log \frac{x^2 + 10x + 16}{x-1} > 1$	$3 \log_2 x - \frac{12}{\log_2 x} < 5$	$\log_2^2 x - 7 \log_2 x + 12 < 0$
$\log \log(x+2) > 0$	$\log_{\frac{1}{2}}(4x + x^2) \leq 1$	$\log x + \log(x+1) > \log(x-2)$