

Sistemi di equazioni logaritmiche

1	$\begin{cases} x + y = 13 \\ \log x + \log y = \log 36 \end{cases}$	$x = 4, y = 9; x = 9, y = 4$
2	$\begin{cases} x + y = 29 \\ \log x + \log y = 2 \end{cases}$	$x = 25, y = 4$
3	$\begin{cases} \log x + \log y = 3 \\ \log x - \log y = 1 \end{cases}$	$x = 100, y = 10$
4	$\begin{cases} \log x - \log y = 1 \\ 3\log x + 2\log y = 3 \end{cases}$	$x = 10, y = 1$
5	$\begin{cases} x + \log y^2 = 3 \\ y^x = 10 \end{cases}$	$x = 1, y = 10$
6	$\begin{cases} \log x - \log y = 1 \\ \frac{100}{x} + \frac{2y}{5} = 5 \end{cases}$	$x = 25, y = \frac{5}{2}; x = 100, y = 10$
7	$\begin{cases} x^3 + y^3 = 1001 \\ \log x - \log y = 1 \end{cases}$	$x = 10, y = 1$
8	$\begin{cases} \log x + \log y = 1 \\ x + y = 7 \end{cases}$	$x = 5, y = 2; x = 2, y = 5$
9	$\begin{cases} 5(\log_y x + \log_x y) = 26 \\ xy = 64 \end{cases}$	$x = 2, y = 32; x = 2, y = 32;$
10	$\begin{cases} xy = 40 \\ x^{\log y - \log 2} = 2 \end{cases}$	$x = 2, y = 20; x = 10, y = 4$
11	$\begin{cases} x^y = 16 \\ \frac{x}{y} = 2 \end{cases}$	$x = 4, y = 2$
12	$\begin{cases} xy = 40 \\ x^{\log y} = 4 \end{cases}$	$x = 10, y = 4; x = 4, y = 10$
13	$\begin{cases} x^{\log y} = 2 \\ xy = 20 \end{cases}$	$x = 10, y = 2; x = 2, y = 10$
14	$\begin{cases} \log_x \log_2 \log_x y = 0 \\ \log_y 9 = 1 \end{cases}$	$x = 3, y = 9$
15	$\begin{cases} \log x + \log y = 1 \\ \log x - \log y = 3 \end{cases}$	$x = 100, y = \frac{1}{10};$
16	$\begin{cases} x^2 + y^2 = 13 \\ \log x + \log y = \log 6 \end{cases}$	$x = 2, y = 3; x = 3, y = 2$
17	$\begin{cases} \log x + \log y = 1 \\ x^4 + y^4 = 641 \end{cases}$	$x = 5, y = 2; x = 2, y = 5$
18	$\begin{cases} \log \sqrt{x} - \log \sqrt{y} = \frac{1}{2} \\ 3\log x + 2\log y = 8 \end{cases}$	$x = 100, y = 10$
19	$\begin{cases} x^x + y^y = 31 \\ x \log x + y \log y = \log 108 \end{cases}$	$x = 2, y = 3; x = 3, y = 2$

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20	$\begin{cases} xy = 100 \\ x^{\log x} = 10 \end{cases}$	$x = 10, y = 10; x = \frac{1}{10}, y = 1000$
21	$\begin{cases} \log_2 x + 2 \log_4 y = 3 \\ x + y = 6 \end{cases}$	$x = 2, y = 4; x = 4, y = 2$
22	$\begin{cases} y \log x = 4 \\ \frac{1}{x^y} = 10 \end{cases}$	$x = 100, y = 2; x = \frac{1}{100}, y = -2$
23	$\begin{cases} \log 100 + \log y = 4 \\ \log x + \log_y 100 = 2 \end{cases}$	$x = 10, y = 100$
24	$\begin{cases} \log_2 xy = 5 \\ \log_{\frac{1}{2}} \frac{x}{y} = 1 \end{cases}$	$x = 4, y = 8; x = -4, y = -8$
25	$\begin{cases} \log(x^2 + y^2) - 1 = \log 13 \\ \log(x+y) + \log(x-y) = 5 \log 2 \end{cases}$	$x = 9, y = 7$
26	$\begin{cases} x^y = 5x - 4 \\ \log_y 16 = 4 \end{cases}$	$x = 4, y = 2$
27	$\begin{cases} \log_4 x - \log_2 y = 0 \\ x^2 - 5y^2 + 4 = 0 \end{cases}$	$x = 1, y = 1; x = 4, y = 2$
28	$\begin{cases} \log_y x - \log_x y = 0 \\ x^2 + y = 12 \end{cases}$	$x = 3, y = 3$
29	$\begin{cases} 2^x 4^y = 32 \\ \log(x-y)^2 = 2 \log 2 \end{cases}$	$x = 3, y = 1; x = \frac{1}{3}, y = \frac{7}{3}$
30	$\begin{cases} \log x - \log y = \log \sqrt{10} \\ 2 \log x + \log y = \frac{5}{2} \end{cases}$	$x = 10, y = \sqrt{10}$
31	$\begin{cases} x + y = 25 \\ \log x + \log y = 2 \end{cases}$	$x = 20, y = 5; x = 5, y = 20$
32	$\begin{cases} \log_3 x + \log_3 y = -0,5 \\ \log_3 x - \log_3 y = -1,5 \end{cases}$	$x = \frac{1}{3}, y = \sqrt{3}$
33	$\begin{cases} \log(x+y) = (\log x + \log y) \\ 2^x = 8^y \end{cases}$	$x = 4, y = \frac{4}{3}$
34	$\begin{cases} \log x - \log y = 1 \\ 2^x : 2^y = 8^{30} \end{cases}$	$x = 100, y = 10$
35	$\begin{cases} \frac{\log x}{\log y} = 2 \\ 3^x : 3^y = 9^3 \end{cases}$	$x = 9, y = 3$
36	$\begin{cases} x^2 + y^2 = 29 \\ \log \sqrt{x} + \log \sqrt{y} = \frac{1}{2} \end{cases}$	$x = 2, y = 5; x = 5, y = 2$
37	$\begin{cases} \log x - \log y = 2 \\ x + xy = 11 \end{cases}$	$x = 10, y = \frac{1}{10}$
38	$\begin{cases} x^y = 0,01 \\ \log x^2 + y = 0 \end{cases}$	$x = 10, y = -2; x = \frac{1}{10}, y = 2$

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39	$\begin{cases} 5\log_2(2x - 3y) - 3\log_2(6x - 5y) = 3 \\ 12\log_2(2x - 3y) - 5\log_2(6x - 5y) = 16 \end{cases}$	$x = 1, y = -2$
40	$\begin{cases} \log_3 y + \log_3 z = 2a \\ \log_3 z + \log_3 x = 2b \\ \log_3 x + \log_3 y = 2c \end{cases}$	$x = 3^{b+c-a}, y = 3^{c+a-b}, z = 3^{a+b-c}$
41	$\begin{cases} \log_4 x + \log_4 y = \frac{7}{2} \\ x^2 + y^2 = 320 \end{cases}$	$x = 8, y = 16; x = 16, y = 8$
42	$\begin{cases} x^{\log y} = 1 \\ \log x + \log y = 1 \end{cases}$	$x = 1, y = 10; x = 10, y = 1$
43	$\begin{cases} \log_2(x^2 + x + 4) - 3\log_4(y^2 + y + 4) = -2 \\ \log_2(x^2 + x + 4)^2 + 2\log_{16}(y^2 + y + 4) = 10 \end{cases}$	$x = 3, y = 3; x = -4, y = -4$ $x = 3, y = -4; x = -4, y = 3$
44	$\begin{cases} \log x \cdot \log y = \frac{3}{16} \\ xy = 10 \end{cases}$	$x = \sqrt[4]{1000}, y = \sqrt[4]{10};$ $x = \sqrt[4]{10}, y = \sqrt[4]{1000}$
45	$\begin{cases} \log(x^2 y) + \log(xy^2) = 9 \\ x + y = 110 \end{cases}$	$x = 100, y = 10; x = 10, y = 100$
46	$\begin{cases} \log(xy) + \log\left(\frac{x}{y} + \frac{y}{x}\right) = 2 \\ \log(8x + 6y) = 2 \end{cases}$	$x = 8, y = 6$
47	$\begin{cases} \log_a x - \log_a y = b \\ x + y = a \end{cases}$	$x = \frac{a^{b+1}}{a^b + 1}, y = \frac{a}{a^b + 1}$
48	$\begin{cases} x^{\log y} = 100 \\ (\log x)^2 + (\log y)^2 = 5 \end{cases}$	$x = 10, y = 100; x = 100, y = 10$ $x = \frac{1}{10}, y = \frac{1}{100}; x = \frac{1}{100}, y = \frac{1}{10}$
49	$\begin{cases} \frac{1}{5}\log x - \frac{1}{2}\log y = 0 \\ \frac{1}{3}\log x - \frac{1}{2}\log z = 1 \\ \frac{1}{2}\log z - \frac{1}{3}\log y = 2 \end{cases}$	$x = 10^{15}, y = 10^6, z = 10^8$
50	$\begin{cases} \log x - \log y = 1 \\ x^2 + y^2 = 10100 \end{cases}$	$x = 100, y = 10$
51	$\begin{cases} 2\log x + \log y = 5 \\ \log x - \log y = 1 \end{cases}$	$x = 100, y = 10$
52	$\begin{cases} \log x + \log y = 2 \\ x - y = 21 \end{cases}$	$x = 25, y = 4$
53	$\begin{cases} \log x + \log y = 4 \\ \log x - \log y = 2 \end{cases}$	$x = 1000, y = 10$
54	$\begin{cases} xy = 300 \\ x^{\log y} = 9 \end{cases}$	$x = 3, y = 100$
55	$\begin{cases} x^3 + y^3 = 1001 \\ \log x + \log y = 1 \end{cases}$	$x = 10, y = 1; x = 1, y = 10$