risolvi i seguenti sistemi di equazioni esponenziali ricordando le condizioni relative alla base che deve essere maggiore di zero e diversa da uno

1	$\begin{cases} x + y = 9 \\ 2^{x-y} = 8 \end{cases}$	$(6; 3)$
2	$\begin{cases} x + y = 12 \\ 3^{x-y} = 81 \end{cases}$	$(8; 4)$
3	$\begin{cases} x - y = 5 \\ 4^{x+y} = 2 \end{cases}$	$\left(\dfrac{11}{4}; -\dfrac{9}{4}\right)$
4	$\begin{cases} x + y = -3 \\ 3^{xy} = 9 \end{cases}$	$(-2; -1) \quad (-1; -2)$
5	$\begin{cases} 5^{x+2y} = 125 \\ x - 2y = 7 \end{cases}$	$(5; -1)$
6	$\begin{cases} 3^x + y = 0 \\ 3^{2x} + y = 6 \end{cases}$	$(1; -3)$
7	$\begin{cases} y + 2^{2x} = 0 \\ y + 2^{2x-1} = -8 \end{cases}$	$(2; -16)$
8	$\begin{cases} 9^x + 9 = 10y \\ y = 3^x \end{cases}$	$(0; 1) \quad (2; 9)$
9	$\begin{cases} x + 7^y = 0 \\ 2y + 7^{1-y} = 3 \end{cases}$	$impossibile$
10	$\begin{cases} y - 5^{x-1} = 0 \\ 5 \cdot 3^x = 9y \end{cases}$	$(2; 5)$
11	$\begin{cases} 3^x \cdot 3^5 + 27y = 28 \\ 3^{2x} - y + 2 \cdot 3^{2x} = 0 \end{cases}$	$\left(-2; \dfrac{1}{27}\right)$
12	$\begin{cases} 5^x - 3y = 0 \\ 2 \cdot 5^x + 9y = 1 \end{cases}$	$\left(-1; \dfrac{1}{15}\right)$
13	$\begin{cases} 34 - 3^x = -y \\ 18y - 3^x = 0 \end{cases}$	$(\log_3 36 ; 2)$
14	$\begin{cases} 3^x = 2y + 1 \\ 3^{2x} - 9y^2 = 0 \end{cases}$	$\left(\log_3 \dfrac{3}{5}; -\dfrac{1}{5}\right) \quad (1; 1)$

15	$\begin{cases} x - y = 2 \\ 3^{xy} = 1 \end{cases}$	$(0; -2)\ (2; 0)$
16	$\begin{cases} 3^x \cdot 9^y = 3 \\ x - y = -5 \end{cases}$	$(-3; 2)$
17	$\begin{cases} 3x - 2y = 8 \\ 3^{5x+6y} = 81 \end{cases}$	$(2; -1)$
18	$\begin{cases} x^{y-3} = 1 \\ y^{x-2} = y \end{cases}$	$(3; 3)$
19	$\begin{cases} x^y = y^x \\ x = 2y \end{cases}$	$(4; 2)$
20	$\begin{cases} 3^x \cdot 5^y = 75 \\ 3^y \cdot 5^x = 45 \end{cases}$	$(1; 2)$
21	$\begin{cases} y^x = 64 \\ y^{x+1} = 4y^{x-1} \end{cases}$	$(6; 2)$
22	$\begin{cases} a^x \cdot a^{2y} = a^6 \\ x - 3y = 1 \end{cases}$	$(4; 1)$
23	$\begin{cases} 4^{3x-4} + 8^{2y-4} = 80 \\ y - x = 1 \end{cases}$	$(2; 3)$
24	$\begin{cases} x + y = 3 \\ 3^{xy} = 9 \end{cases}$	$(1; 2)\ \ (2; 1)$
25	$\begin{cases} 2^{x+y-1} = 16 \\ x^2 + y^2 = 17 \end{cases}$	$(1; 4)\ \ (4; 1)$
26	$\begin{cases} 5^{4x} \cdot 125^y = 125 \\ 2 \cdot 2^{6x} = 16^{3y} \end{cases}$	$\left(\dfrac{1}{2}; \dfrac{1}{3}\right)$
27	$\begin{cases} 3^{x-2} \cdot 9^y = 27 \\ x = 8 + y \end{cases}$	$(7; -1)$
28	$\begin{cases} 4^{x+2y} \cdot 16 = 64 \\ 3^{3x} = 9 \end{cases}$	$\left(\dfrac{2}{3}; \dfrac{1}{6}\right)$
29	$\begin{cases} 27^{3-x} + 9^{3y-2} = 36 \\ x - y = 1 \end{cases}$	$(2; 1)$

Sistemi di equazioni esponenziali

30	$\begin{cases} 6^{2x+3y} = 6^{19} \\ (3^x)^{1+y} = 3^{12} \end{cases}$	$(2;5)$ $\left(9;\dfrac{1}{3}\right)$
31	$\begin{cases} 4^{3x-2y} = 1024 \\ 10^{6x-7y} = 10000 \end{cases}$	$(3;2)$
32	$\begin{cases} 36x^2 + 36y^2 = 13 \\ 8^{xy} = \sqrt[6]{8} \end{cases}$	$\left(\dfrac{1}{2};\dfrac{1}{3}\right)$ $\left(-\dfrac{1}{2};-\dfrac{1}{3}\right)$ $\left(\dfrac{1}{3};\dfrac{1}{2}\right)$ $\left(-\dfrac{1}{3};-\dfrac{1}{2}\right)$
33	$\begin{cases} 9^x + 13x = 0 \\ 9^x = \dfrac{3}{2} \end{cases}$	*impossibile*
34	$\begin{cases} x^y = y^x \\ \dfrac{x}{y} = \dfrac{5}{3} \end{cases}$	$\left(\dfrac{25}{9}\sqrt{\dfrac{5}{3}};\ \dfrac{5}{3}\sqrt{\dfrac{5}{3}}\right)$
35	$\begin{cases} 3^x - 2y = 0 \\ \dfrac{5}{2}y - 3^x = 2 \end{cases}$	$(\log_3 8\,;4)$
36	$\begin{cases} x + y = 4 \\ a^{x-y} = a^5 \end{cases}$	$\left(\dfrac{9}{2};-\dfrac{1}{2}\right)$
37	$\begin{cases} a^{x-1} \cdot a^{2x} = 1 \\ a^x = a^2 \cdot a^{12y} \end{cases}$	$\left(\dfrac{1}{3};-\dfrac{5}{36}\right)$
38	$\begin{cases} y^x = 16 \\ y^{\frac{1}{x}} = 2 \end{cases}$	$(2;4)$
39	$\begin{cases} 3xy = 0 \\ 3y + \left(\dfrac{1}{18}\right)^x = 0 \end{cases}$	$\left(0;-\dfrac{1}{3}\right)$
40	$\begin{cases} x + 2y = 3 \\ 4^{xy} = \left(\dfrac{1}{16}\right) \end{cases}$	$(-1;2)$ $\left(4;-\dfrac{1}{2}\right)$
41	$\begin{cases} x^y = 125 \\ y^{2-y} = \dfrac{1}{3} \end{cases}$	$(5;3)$

Sistemi di equazioni esponenziali

42	$\begin{cases} \left(\dfrac{1}{2}\right)^x + y = 0 \\ y^2 - 4 = 0 \end{cases}$	$(-1; -2)$
43	$\begin{cases} \left(\dfrac{1}{12}\right)^{x+1} - 3y = 0 \\ 2y - \left(\dfrac{1}{12}\right)^x = 1 \end{cases}$	*impossibile*
44	$\begin{cases} 4^{xy} - 9 \cdot 2^{xy} + 8 = 0 \\ 3^{x+y} \cdot 9^{x-y} = 1 \end{cases}$	$(0; 0) \quad (1; 3) \quad (-1; -3)$
45	$\begin{cases} x = 3^y \\ \dfrac{2}{3} \cdot 3^{y+1} - x^2 + 3 = 0 \end{cases}$	$(3; 1)$
46	$\begin{cases} a^x \cdot a^y = a^5 \\ a^{x^2-y^2} = a^5 \end{cases}$	$(3; 2)$
47	$\begin{cases} a^y \cdot a^y = a^4 \\ a^{x^2-y^2} = a^5 \end{cases}$	$(3; 2)$
48	$\begin{cases} y^{x^2-7x+12} = 1 \\ x + y = 6 \end{cases}$	$(3; 3) \quad (4; 2)$
49	$\begin{cases} a^{2x} \cdot a^{3y} = a^{19} \\ (a^x)^{y+1} = a^{12} \end{cases}$	$(2; 5) \quad \left(9; \dfrac{1}{3}\right)$
50	$\begin{cases} a^{x+y} \cdot a^{xy} = a^5 \\ a^{(x+y)xy} = a^6 \end{cases}$	$(2; 1) \quad (1; 2)$
551	$\begin{cases} 2^y \cdot 8^x = 4 \\ \dfrac{3^y}{9^x} = \left(\dfrac{1}{3}\right)^{4x} \end{cases}$	$(2; -4)$
52	$\begin{cases} \dfrac{4^x}{16^y} = 64 \cdot 256^{x+y} \\ \dfrac{2^y}{2^x} = \left(\dfrac{1}{4}\right)^{3x} \end{cases}$	$\left(\dfrac{1}{9}; -\dfrac{5}{9}\right)$
53	$\begin{cases} 4^{xy} = \sqrt{4} \\ 9^{-(x+y)} \cdot 27^y = 1 \end{cases}$	$\left(-\dfrac{1}{2}; -1\right) \quad \left(\dfrac{1}{2}; 1\right)$

54	$\begin{cases} 25^x \cdot \sqrt{125^y} = 5 \\ 6^{x+5} = 6^{4-y} \end{cases}$	$(5; -6)$
55	$\begin{cases} 8^x = \dfrac{\sqrt[3]{8}}{8^{-y}} \\ \sqrt[6]{16} = 2^{xy} \end{cases}$	$\left(-\dfrac{2}{3}; -1\right) \quad \left(1; \dfrac{2}{3}\right)$
56	$\begin{cases} 3\left(\dfrac{1}{2}\right)^{x+1} + y - 1 = 0 \\ y = \left(\dfrac{1}{2}\right)^{2x} \end{cases}$	$\left(1; \dfrac{1}{4}\right)$
57	$\begin{cases} x^y = 16 \\ \dfrac{x}{y} = 2 \end{cases}$	$(4; 2)$
58	$\begin{cases} 3^{x^2+y^2} = 243 \\ 10^x \cdot 10^5 = \dfrac{10^4}{10^y} \end{cases}$	$(1; -2) \quad (-2; 1)$
59	$\begin{cases} 4^{x+1} \cdot 4^y = \left(\dfrac{1}{2}\right)^{x-1} \\ x + y = \dfrac{1}{3} \end{cases}$	$\left(-\dfrac{5}{3}; 2\right)$
60	$\begin{cases} 1 + y = \left(\dfrac{1}{3}\right)^{\frac{1}{2}x+1} \\ y = \left(\dfrac{1}{3}\right)^x \end{cases}$	*impossibile*
61	$\begin{cases} a^{2+x-y} = a^{2x} \\ b^{2x} \cdot \sqrt{b^y} - 1 = 0 \end{cases}$	$\left(-\dfrac{2}{3}; \dfrac{8}{3}\right)$
62	$\begin{cases} a^{2y^2} - a^{4x} = 0 \\ \dfrac{b^{4x} \cdot \sqrt{b^{2x}}}{b^{\frac{3}{2}}} = \left(\dfrac{1}{b}\right)^y \end{cases}$	$\left(\dfrac{1}{2}; -1\right) \quad \left(\dfrac{9}{50}; \dfrac{3}{5}\right)$
63	$\begin{cases} \sqrt{a^{1-x}} \cdot \sqrt[3]{a^{x+4y}} = a^2 \\ b^3 \cdot \sqrt[4]{b^x} : \sqrt[3]{b^{2(2+y)}} = \sqrt{b} \end{cases}$	$\left(-\dfrac{5}{2}; \dfrac{13}{16}\right)$

Sistemi di equazioni esponenziali

64	$\begin{cases} m^{2x} = \dfrac{m^{15}}{m^y} \\ \dfrac{n^x}{n^{3y}} - n^4 = 0 \end{cases}$	$(7; 1)$
65	$\begin{cases} m^{6y} : m^{5x} = 1 : m^7 \\ n^{2y} = n^{81} : n^{15x} \end{cases}$	$(5; 3)$
66	$\begin{cases} \sqrt[9]{m^{12x+12}} = m^{x+2y} \\ n^{2x+y} = \sqrt[4]{n^{5(3+y)}} \end{cases}$	$(2; 1)$
67	$\begin{cases} m^{2(x-1)} = m^{2y} \\ x^2 - 2y = 3 \end{cases}$	$(1+\sqrt{2}; \sqrt{2})\ (1-\sqrt{2}; -\sqrt{2})$
68	$\begin{cases} \left(\dfrac{1}{2}\right)^x - 4y = 0 \\ 4y + 3 \cdot \left(\dfrac{1}{2}\right)^x = 1 \end{cases}$	$\left(2; \dfrac{1}{16}\right)$
69	$\begin{cases} -\left(\dfrac{1}{3}\right)^x + \dfrac{1}{3} = 12y \\ 2y - \left(\dfrac{1}{9}\right)^x = 0 \end{cases}$	$\left(\log_3 6; \dfrac{1}{72}\right)$
70	$\begin{cases} x^2 + y^2 = 17 \\ \left(2^{\frac{1}{x}}\right)^y = 16 \end{cases}$	$(-1; -4)\ (1; 4)$
71	$\begin{cases} \sqrt{3^x} \cdot \sqrt[3]{3^y} = \dfrac{1}{\sqrt[3]{9}} \\ x^2 + y^2 = 5 \end{cases}$	$(-2; 1)\ \left(\dfrac{2}{13}; -\dfrac{29}{13}\right)$
72	$\begin{cases} x^2 + xy + y^2 = 4 \\ b^x b^y = b^2 \end{cases}$	$(2; 0)\ (0; 2)$
73	$\begin{cases} \sqrt[3]{a^x} : \sqrt[7]{a^{2y}} = a^{-2} \\ \sqrt[4]{a^x} : \sqrt[3]{a^{2y}} = a^{-11} \end{cases}$	$(12; 21)$
74	$\begin{cases} x^{x+y} \cdot (a^x)^y = a^2 \\ \left(a^{x^2}\right)^y = a^{6-xy^2} \end{cases}$	$(1; 2)$

75	$\begin{cases} \sqrt{a^x} \cdot \sqrt[3]{a^y} = a^5 \\ \sqrt[3]{b^x} \cdot \sqrt{b^y} = b^5 \end{cases}$	$(6;\ 6)$
76	$\begin{cases} \sqrt[3]{a^x} = \sqrt[4]{a^y} \\ \sqrt{b^x} \cdot \sqrt[4]{b^y} = b^5 \end{cases}$	$(6;\ 8)$
77	$\begin{cases} \sqrt[x]{a} : \sqrt[y]{a^{-1}} = a^{\frac{7}{12}} \\ \sqrt[x]{a^3} : \sqrt[y]{a^4} = 1 \end{cases}$	$(3;\ 4)$
78	$\begin{cases} \sqrt[x+1]{a^3} : a^{-2-y} = a^7 \sqrt[4]{a^{-1}} \\ \sqrt[x+1]{a^7} : \sqrt{a^{y-5}} = a^2 \sqrt[4]{a^3} \end{cases}$	$(3;\ 4)$
79	$\begin{cases} y^x = 64 \\ \sqrt[x-1]{y^{x+1}} = 16 \end{cases}$	$(3;\ 4)$
80	$\begin{cases} \sqrt[5x]{a^2} : \sqrt[2y]{a^3} = \sqrt[10]{a^{-3}} \\ \sqrt[2x]{a^5} \cdot \sqrt[2y]{a^3} = \sqrt[4]{a^7} \end{cases}$	$(2;\ 3)$
81	$\begin{cases} \sqrt[x+y]{3^x} \cdot \sqrt[x-y]{3^y} = \sqrt[x^2-y^2]{9^{xy}} \\ 4^y \cdot 4^x = 256 \end{cases}$	*impossibile*
82	$\begin{cases} \sqrt[3]{a^x} \cdot \sqrt[4]{a^y} = \sqrt[6]{a^5} \\ \sqrt[4]{b^x} \cdot \sqrt[5]{b^y} = \sqrt[20]{b^{13}} \end{cases}$	$(1;\ 2)$
83	$\begin{cases} \sqrt[2x]{a^2} \cdot \sqrt[3y]{a^5} = \sqrt[6]{a^{13}} \\ \sqrt[3x]{a^2} \cdot \sqrt[5y]{a^3} = \sqrt[15]{a^{14}} \end{cases}$	$(2;\ 1)$
84	$\begin{cases} a^x \cdot a^{5y} = a^{28} \\ a^{7x} : a^6 = a^{3y} \end{cases}$	$(3;\ 5)$
85	$\begin{cases} 3^{x-2} + 9^{y-3} = \dfrac{82}{9} \\ x - 2y = 0 \end{cases}$	$(4;\ 2)$
86	$\begin{cases} x^2 + y^2 = \dfrac{13}{36} \\ 2^{x+y} = \sqrt[6]{32} \end{cases}$	$\left(\dfrac{1}{2};\ \dfrac{1}{3}\right)\ \ \left(\dfrac{1}{3};\ \dfrac{1}{2}\right)$

87	$\begin{cases} 3^{x-y} = \dfrac{1}{3} \\ 4^y \cdot 2^z = \dfrac{1}{16} \\ 3^x = 27^z \end{cases}$	$\left(-\dfrac{18}{7}; -\dfrac{11}{7}; -\dfrac{6}{7}\right)$
88	$\begin{cases} x + y + z = 16 \\ 3^x = 3^{1+2z} \\ x^z = y^{2z} \end{cases}$	$(9; 3; 4)$
89	$\begin{cases} 2^{\frac{x}{y-8}} = 16 \\ 9^z = 3^{\frac{120}{y}} \\ x + z = 3y \end{cases}$	$(-24; 2; 30) \quad (88; 30; 2)$
90	$\begin{cases} a^{7xy} = a^x \cdot a^y \\ a^{8xz} = a^x \cdot a^z \\ a^{9zy} = a^z \cdot a^y \end{cases}$	$\left(\dfrac{1}{3}; \dfrac{1}{4}; \dfrac{1}{5}\right) \quad (0; 0; 0)$