

discuti e risovi i seguenti sistemi lineari letterali

1	$\begin{cases} x + y = a \\ x - y = b \end{cases}$	$\left(\frac{a+b}{2}; \frac{a-b}{2} \right)$
2	$\begin{cases} x + 2y = a \\ 3x - y = 2a \end{cases}$	$\left(\frac{5}{7}a; \frac{1}{7}a \right)$
3	$\begin{cases} 3y - 2x = 2a \\ 5x - 2y = 3a \end{cases}$	$\left(\frac{13}{11}a; \frac{16}{11}a \right)$
4	$\begin{cases} 2x - y = 4a \\ x + 2y = 7a \end{cases}$	$(3a; 2a)$
5	$\begin{cases} 2x - y = 3a \\ x + y = 3(a - b) \end{cases}$	$(2a - b; a - 2b)$
6	$\begin{cases} x + y = a - b \\ x - y = a + b \end{cases}$	$(a; -b)$
7	$\begin{cases} 3x + y = 3a - b \\ x + 4y = a + 4b \end{cases}$	$\left(a - \frac{8}{11}b; \frac{13}{11}b \right)$
8	$\begin{cases} 3(x + 2a) - 3y = 3(3a - b) \\ 3x - 2(2b - y) = 3a - 2b \end{cases}$	$(a; b)$
9	$\begin{cases} 2(b - x) + 3(y - a) = -2b \\ 3(a + x) - 5(y + b) = b - 2a \end{cases}$	$(2b; a)$
10	$\begin{cases} 2x - y = a \\ x + 3y = 4a \end{cases}$	$(a; a)$
11	$\begin{cases} x + y - 1 = a + b \\ x + y - b = a + 1 \end{cases}$	indeterminato
12	$\begin{cases} x - 2y = b - a \\ x + 3y = 4a + b \end{cases}$	$(a + b; a)$
13	$\begin{cases} 2(x - a + 1) + 3y = 6b \\ x + 1 - \frac{y}{2} = a - b \end{cases}$	$(a - 1; 2b)$
14	$\begin{cases} 2x + 3y = 4a - 9b \\ \frac{x}{2} - \frac{y}{3} = a + b \end{cases}$	$(2a; -3b)$

15	$\begin{cases} 5(2x + a) - 4(y + b) = 9x + 2a + b \\ \frac{3}{2}(x + y) - 3b = 3y \end{cases}$	$(a + b; a - b)$
16	$\begin{cases} \frac{x+y}{5} + \frac{2a}{3} = \frac{x+2a}{3} \\ \frac{a+y}{3} - \frac{1}{4}a = \frac{2x-3a}{4} \end{cases}$	$(3a; 2a)$
17	$\begin{cases} 2x - 3y = 3a - 9b \\ \frac{x}{3} - \frac{2}{3}y = a - 2b \end{cases}$	$(-3a; -3a + 3b)$
18	$\begin{cases} (a-4)x - 2y = 3 \\ (a-3)x - y = a - 2 \end{cases}$	$\text{se } a = 2 \text{ impossibile}$ $\text{se } a \neq 2 \quad \left(\frac{2a-7}{a-2}; \frac{a^2-9a+17}{a-2} \right)$
19	$\begin{cases} x + my = 3 - m \\ 2x + 2y = -5 \end{cases}$	$\text{se } m = 1 \text{ impossibile}$ $\text{se } m \neq 1 \quad \left(\frac{3(m+2)}{2(1-m)}; \frac{2m-11}{2(1-m)} \right)$
20	$\begin{cases} (m-2)x + 3y = 6 \\ (m-1)x + 4y = 8 \end{cases}$	$\text{se } m = 5 \text{ indeterminato}$ $\text{se } m \neq 5 \quad (0; 2)$
21	$\begin{cases} 3x - 6y = m \\ 2x - 4y = m + 1 \end{cases}$	$\text{se } m = -3 \text{ indeterminato}$ $\text{se } m \neq -3 \text{ impossibile}$
22	$\begin{cases} (m-2)x - 3y = 3 \\ (2m+5)x - 2y = -1 \end{cases}$	$\text{se } m = -\frac{19}{4} \text{ impossibile}$ $\text{se } m \neq -\frac{19}{4} \quad \left(-\frac{9}{19+4m}; -\frac{13+7m}{19+4m} \right)$
23	$\begin{cases} (a+2)x + 3y = 1 \\ (a-3)x + 2y = 5 \end{cases}$	$\text{se } a = 13 \text{ impossibile}$ $\text{se } a \neq 13 \quad \left(\frac{13}{a-13}; \frac{4a+13}{13-a} \right)$
24	$\begin{cases} x + y = m + 1 \\ x - y = 1 - m \end{cases}$	$(1; m)$
25	$\begin{cases} 4x + y = k \\ (10 - k)x + 2y = 10 \end{cases}$	$\text{se } k = 2 \text{ impossibile}$ $\text{se } k \neq 2 \quad \left(\frac{2k-10}{k-2}; \frac{k^2-10k+40}{k-2} \right)$
26	$\begin{cases} 3ax + (a+3)y = 1 \\ (3a-2)x + ay = 3 \end{cases}$	$\text{se } a = \frac{6}{7} \text{ impossibile}$ $\text{se } a \neq \frac{6}{7} \quad \left(\frac{2a+9}{7a-6}; \frac{6a+2}{6-7a} \right)$

27	$\begin{cases} 2x + y = a + 2 \\ ax + (a - 1)y = 2a \end{cases}$	se $a = 2$ indeterminato se $a \neq 2$ $(a + 1; -a)$
28	$\begin{cases} (a - 1)x + (a + 1)y = -2a \\ (a + 1)x + (a - 1)y = 2a \end{cases}$	se $a = 0$ indeterminato se $a \neq 0$ $(a, -a)$
29	$\begin{cases} 2x + ay = a \\ 3x - ay = 5 \end{cases}$	se $a = 0$ impossibile se $a \neq 0$ $\left(\frac{a+5}{5}; \frac{3a-10}{5a}\right)$
30	$\begin{cases} ax + (a + 1)y = a \\ x + 3y = 2a \end{cases}$	se $a = \frac{1}{2}$ indeterminato se $a \neq \frac{1}{2}$ $(-a; a)$
31	$\begin{cases} ax + 2y = 4 \\ (a - 1)x + y = a \end{cases}$	se $a = 2$ indeterminato se $a \neq 2$ $(2; 2 - a)$
32	$\begin{cases} x + ay = 3a \\ 5x - 7ay = 3a \end{cases}$	se $a = 0$ indeterminato se $a \neq 0$ $(2a; 1)$
33	$\begin{cases} 2ax - y = 5a \\ -3ax + 2y = -8a \end{cases}$	se $a = 0$ indeterminato se $a \neq 0$ $(2; -a)$
34	$\begin{cases} 8x + ay = 3 \\ ax + 2y = 5 \end{cases}$	se $a = \pm 4$ impossibile se $a \neq \pm 4$ $\left(\frac{6-5a}{16-a^2}; \frac{40-3a}{16-a^2}\right)$
35	$\begin{cases} (x + 1)a - 2y = -4a \\ 2ax + y = 5a \end{cases}$	se $a = 0$ indeterminato se $a \neq 0$ $(1; 3a)$
36	$\begin{cases} (1 - a)x - ay = 1 - 2a \\ ax + (a + 1)y = 2a \end{cases}$	$(1 - a; a)$
37	$\begin{cases} (b + 1)x - (b^2 - 1)y = b^2 + 1 \\ x - (b - 1)y = 1 \end{cases}$	se $b = 0 \vee b = 1$ indeterminato se $b \neq 0 \wedge b \neq 1$ impossibile
38	$\begin{cases} (a + 1)x + ay = 5 \\ (a^2 - 1)x + a(a - 1)y = 3a - 5 \end{cases}$	se $a = 0$ indeterminato se $a \neq 0$ impossibile
39	$\begin{cases} ax + (a + 1)y = 2 \\ (a^2 + a)(x - y) = 1 \end{cases}$	se $a = 0 \vee a = -1$ impossibile se $a = -\frac{1}{2}$ indeterminato se $a \neq 0 \wedge a \neq -1 \wedge a \neq -\frac{1}{2}$ $\left(\frac{1}{a}; \frac{1}{a+1}\right)$

40	$\begin{cases} a(ax + 2x - 2) = (a+2)(a-2) \\ a(x-y) + 2y = a \end{cases}$	se $a = 0 \wedge a = \pm 2$ impossibile se $a \neq 0 \wedge a \neq \pm 2$ $\left(\frac{a^2 + 2a - 4}{a(a+2)}, \frac{4}{4-a^2} \right)$
41	$\begin{cases} \frac{2x+y}{a} - \frac{2a}{(a^2-1)} = 0 \\ y - \frac{2x+y}{a^2} = 2(1-x) \end{cases}$	<i>C.E.</i> $a \neq 0 \wedge a \neq \pm 1$ indeterminato
42	$\begin{cases} \frac{x}{a} - \frac{y+a}{a} = -2 \\ x-y = -a \end{cases}$	<i>C.E.</i> $a \neq 0$ indeterminato
43	$\begin{cases} \frac{x-y}{a+2} - \frac{x}{2} = -a \\ \frac{x-y}{2-a} - \frac{y}{a} = 2 \end{cases}$	<i>C.E.</i> $a \neq -2 \wedge a \neq 0$ $(4; a^2)$
44	$\begin{cases} \frac{a+x}{a} - y - \frac{3}{2a} = -2 + \frac{1}{2a} \\ \frac{x-a}{3} + \frac{y+a}{2} = \frac{13+a}{6} \end{cases}$	<i>C.E.</i> $a \neq 0$ se $a = -\frac{3}{2}$ indeterminato se $a \neq -\frac{3}{2}$ $(2; 3)$
45	$\begin{cases} (a+2)x + y = a \\ 2x - \frac{y}{a-1} + \frac{a}{a+2} = 0 \end{cases}$	<i>C.E.</i> $a \neq -2 \wedge a \neq 1$ se $a = 0$ indeterminato se $a \neq 0$ $\left(\frac{1}{a+2}; a-1 \right)$
46	$\begin{cases} 2x + my = n + 1 \\ 3x + 6y = 2 \end{cases}$	se $m = 4 \wedge n = \frac{1}{3}$ indeterminato se $m = 4 \wedge n \neq \frac{1}{3}$ impossibile se $m \neq 4$ $\left(\frac{6n+6-2m}{12-3m}; \frac{1-3n}{12-3m} \right)$
47	$\begin{cases} ax + y = 3 \\ a^2x + ay = 5b \end{cases}$	se $a \neq 0$ impossibile se $a = \frac{5b}{3}$ con $b = 0$ indeterminato
48	$\begin{cases} bx + ay = 3 \\ b^2x + aby = 2b \end{cases}$	se $a = 0$ impossibile se $b \neq 0$ impossibile se $b = 0$ indeterminato
49	$\begin{cases} x + my = m - 1 \\ x - my = n^2 - 1 \end{cases}$	se $m = 0 \wedge n = 0$ indeterminato se $m = 0 \wedge n \neq 0$ impossibile se $m \neq 0$ $\left(\frac{m+n^2-2}{2}; \frac{m-n^2}{2m} \right)$

50	$\begin{cases} (a+1)x + by = 6 \\ (a-1)x - (b-1)y = 5 \end{cases}$	se $a = \frac{1}{2b-1}$ $b \neq \frac{6}{11}$ impossibile se $a = \frac{1}{2b-1}$ $b = \frac{6}{11}$ indeterminato se $a \neq \frac{1}{2b-1}$ $\left(\frac{6-11b}{a-2ab+1}; \frac{11-a}{a-2ab+1} \right)$
51	$\begin{cases} x - (b+2)y = 2 \\ 2x + 4y = 4a \end{cases}$	se $b = -4$ $a = 1$ indeterminato se $b = -4$ $a \neq 1$ impossibile se $b \neq -4$ $\left(\frac{4+2ab+4a}{b+4}; \frac{2a-2}{b+4} \right)$
52	$\begin{cases} (a+3)x - 5by = 6 \\ 2x + 4y = 1 \end{cases}$	se $a = -\frac{5b+6}{2}$ $b = -\frac{24}{5}$ indeterminato se $a = -\frac{5b+6}{2}$ $b \neq -\frac{24}{5}$ impossibile se $a \neq -\frac{5b+6}{2}$ $\left(\frac{24+5b}{4a+12+10b}; \frac{a-9}{4a+12+10b} \right)$
53	$\begin{cases} x + ay = b \\ 5x - 5y = 4 \end{cases}$	se $a = -1 \wedge b = \frac{4}{5}$ indeterminato se $a = -1 \wedge b \neq \frac{4}{5}$ impossibile se $a \neq -1$ $\left(\frac{5b+4a}{5a+5}; \frac{5b-4}{5a+5} \right)$
54	$\begin{cases} ax + 2y = 0 \\ bx + 4y = 0 \end{cases}$	se $b = 2a$ indeterminato se $b \neq 2a$ $(0; 0)$
55	$\begin{cases} ax + 2y = b \\ 5x + 3y = 4 \end{cases}$	se $a = \frac{10}{3} \wedge b = \frac{8}{3}$ indeterminato se $a = \frac{10}{3} \wedge b \neq \frac{8}{3}$ impossibile se $a \neq \frac{10}{3}$ $\left(\frac{8-3b}{10-3a}; \frac{5b-4a}{10-3a} \right)$
56	$\begin{cases} x + y = a \\ bx + ay = b^2 \end{cases}$	se $a = b$ indeterminato se $a \neq b$ $(a+b; -b)$
57	$\begin{cases} (a+b)x - by = b^2 \\ ax + 2by = 3ab \end{cases}$	se $a = -\frac{2}{3}b \vee b = 0$ indeterminato se $a \neq -\frac{2}{3}b \wedge b \neq 0$ $(b; a)$
58	$\begin{cases} ax + by = 2ab \\ bx + ay = a^2 + b^2 \end{cases}$	se $a = \pm b$ indeterminato se $a \neq \pm b$ $(b; a)$
59	$\begin{cases} 2x - y = 4a + b \\ bx + 2ay = 0 \end{cases}$	se $a = -\frac{b}{4}$ indeterminato se $a \neq -\frac{b}{4}$ $(2a; -b)$

60	$\begin{cases} bx + ay = 0 \\ x + y = a - b \end{cases}$	se $a = b$ indeterminato se $a \neq b$ $(a; -b)$
61	$\begin{cases} ax + by = 2 \\ ax - by = 0 \end{cases}$	se $a = 0 \wedge b = 0$ indeterminato se $a = 0 \wedge b \neq 0$ impossibile se $a \neq 0 \wedge b = 0$ impossibile se $a \neq 0 \wedge b \neq 0$ $\left(\frac{1}{a}; \frac{1}{b}\right)$
62	$\begin{cases} (a+b)x - (a-b)y = 4ab \\ (a-b)x + (a+b)y = 2a^2 - 2b^2 \end{cases}$	$(a+b; a-b)$
63	$\begin{cases} a(x+y) + b(x-y) = 1 \\ a(x-y) + b(x+y) = 1 \end{cases}$	se $a = -b$ impossibile se $a = b$ indeterminato se $a \neq \pm b$ $\left(\frac{1}{a+b}; 0\right)$
64	$\begin{cases} ax + by = a + b \\ 2ax + 3by = 2b + 3a \end{cases}$	se $a = 0 \wedge b = 0$ indeterminato se $a = 0 \wedge b \neq 0$ impossibile se $a \neq 0 \wedge b = 0$ impossibile se $a \neq 0 \wedge b \neq 0$ $\left(\frac{b}{a}; \frac{a}{b}\right)$
65	$\begin{cases} ax + 3y = 5 \\ bx + 4y = 3 \end{cases}$	se $a = \frac{3}{4}b$ impossibile se $a \neq \frac{3}{4}b$ $\left(\frac{11}{4a-3b}; \frac{3a-5b}{4a-3b}\right)$
66	$\begin{cases} x + y = b \\ ax + by = a^2 \end{cases}$	se $a = b$ indeterminato se $a \neq b$ $(a+b; -a)$
67	$\begin{cases} x + y = a + b \\ ax + by = 2ab \end{cases}$	se $a = b$ indeterminato se $a \neq b$ $(b; b)$
68	$\begin{cases} 2ax + 6y = 3a \\ \frac{11}{2}ax - y = y - a \end{cases}$	se $a = b$ indeterminato se $a \neq b$ $(0; \frac{a}{2})$
69	$\begin{cases} ax - 3y = 2 + 3b \\ 3ax + 2y = 6 - 2b \end{cases}$	$\left(\frac{2}{a}; -b\right)$
70	$\begin{cases} \frac{x}{a} + \frac{y}{b} = 1 \\ \frac{x}{b} + \frac{y}{a} = 1 \end{cases}$	C.E. $a \neq 0 \wedge b \neq 0$ se $a = b$ indeterminato se $a = -b$ impossibile se $a \neq \pm b$ $\left(\frac{ab}{a+b}; \frac{ab}{a+b}\right)$

71	$\begin{cases} \frac{x}{a} + \frac{y}{b} = -1 \\ \frac{x}{b} + \frac{y}{a} = -1 \end{cases}$	<p>C.E. $a \neq 0 \wedge b \neq 0$ se $a = b$ indeterminato se $a = -b$ impossibile se $a \neq \pm b$ $\left(\frac{-ab}{a+b}; \frac{-ab}{a+b} \right)$</p>
72	$\begin{cases} \frac{1}{a}x + \frac{1}{b}y = 0 \\ \frac{1}{a}x + by = 1 \end{cases}$	<p>C.E. $a \neq 0 \wedge b \neq 0$ se $b = \pm 1$ impossibile se $b \neq \pm 1$ $\left(\frac{a}{1-b^2}; \frac{b}{b^2-1} \right)$</p>
73	$\begin{cases} \frac{1}{a}x - \frac{1}{b}y = 0 \\ \frac{1}{a}x - \frac{2}{b}y = 1 \end{cases}$	<p>C.E. $a \neq 0 \wedge b \neq 0$ $(-a; -b)$</p>
74	$\begin{cases} \frac{1}{a}x - \frac{1}{b}y = 5 \\ \frac{1}{a}x - \frac{2}{b}y = 0 \end{cases}$	<p>C.E. $a \neq 0 \wedge b \neq 0$ $(10a; 5b)$</p>
75	$\begin{cases} \frac{x}{a} + \frac{y}{b} = 1 \\ \frac{x}{a} - \frac{y}{b} = 2 \end{cases}$	<p>C.E. $a \neq 0 \wedge b \neq 0$ $\left(\frac{3}{2}a; -\frac{b}{2} \right)$</p>
76	$\begin{cases} \frac{x}{a} + \frac{y}{b} = \frac{5}{ab} \\ \frac{3x}{a} - \frac{2y}{b} = -\frac{5}{ab} \end{cases}$	<p>C.E. $a \neq 0 \wedge b \neq 0$ $\left(\frac{1}{b}; \frac{4}{a} \right)$</p>
77	$\begin{cases} \frac{1}{a}x - \frac{1}{b}y = 0 \\ \frac{2}{a}x + \frac{b}{2}y = 1 \end{cases}$	<p>C.E. $a \neq 0 \wedge b \neq 0$ $\left(\frac{2a}{b^2+4}; \frac{2b}{b^2+4} \right)$</p>
78	$\begin{cases} a(x+y) - b(x-y) = 1 \\ a(x+y) + b(x-y) = \frac{a+b}{a-b} \end{cases}$	<p>C.E. $a \neq b$ se $a = 0 \vee b = 0$ indeterminato se $a \neq 0 \wedge b \neq 0$ $\left(\frac{1}{a-b}; 0 \right)$</p>
79	$\begin{cases} (a-b)x + (a+b)y = a+b \\ (a+b)x + (b-a)y = \frac{a(a+b)^2 - b(a-b)^2}{a^2-b^2} \end{cases}$	<p>C.E. $a \neq \pm b$ $\left(\frac{a}{a-b}; \frac{b}{a+b} \right)$</p>

80	$\begin{cases} \frac{x}{2a+b} + \frac{y}{2a-b} = \frac{1}{2a-b} \\ \frac{x-1}{2a+b} = \frac{y}{2a-b} \end{cases}$	C.E. $b \neq \pm 2a$ $\left(\frac{2a}{2a-b}; \frac{b}{2a+b} \right)$
81	$\begin{cases} \frac{x-y}{a-b} - \frac{y}{a} = \frac{b}{a-b} \\ 3x - 2y = 4a \end{cases}$	C.E. $a \neq \pm b$ se $a = \frac{3}{4}b$ indeterminato se $a \neq \frac{3}{4}b$ $(2a; a)$
82	$\begin{cases} \frac{x}{a-b} - \frac{y}{a+b} = \frac{4ab}{a^2-b^2} \\ x-y = 2b \end{cases}$	C.E. $a \neq \pm b$ se $b=0$ indeterminato se $b \neq 0$ $(a+b; a-b)$
83	$\begin{cases} \frac{x}{a-b} + \frac{y}{a+b} = \frac{1}{a^2-b^2} \\ \frac{x}{a} + \frac{y}{b} = \frac{1}{ab} \end{cases}$	C.E. $a \neq \pm b \wedge a \neq 0 \wedge b \neq 0$ $\left(\frac{b}{a^2+b^2}; \frac{a}{a^2+b^2} \right)$
84	$\begin{cases} \frac{x+y+3a}{4a-4} + \frac{y}{a+1} = \frac{2a}{a^2-1} \\ \frac{x}{a} + \frac{y}{a+1} = \frac{a+2}{a+1} \end{cases}$	C.E. $a \neq 0 \wedge a \neq \pm 1$ se $a = \frac{3}{4}$ indeterminato se $a \neq \frac{3}{4}$ $(2a; -a)$
85	$\begin{cases} a(x-y-2) = x+3y+7 \\ \frac{x}{a+3} + \frac{y+2}{1-a} = \frac{1}{a^2+2a-3} \end{cases}$	C.E. $a \neq -3 \wedge a \neq 1$ impossibile
86	$\begin{cases} \frac{x+2a}{a} + \frac{y+b}{b} = 7 \\ \frac{2x-a}{a} - \frac{3y-b}{b} = -2 \end{cases}$	C.E. $a \neq 0 \wedge b \neq 0$ $(2a; 2b)$
87	$\begin{cases} \frac{x+y}{a} + \frac{x-y}{b} = 4 \\ ax+by = (a+b)^2 - 2b^2 \end{cases}$	C.E. $a \neq 0 \wedge b \neq 0$ $(a+b; a-b)$
88	$\begin{cases} 2bx - ay = \frac{2b+a}{a} \\ 2ax + by = \frac{2a-b}{a} \end{cases}$	C.E. $a \neq 0$ $\left(\frac{1}{a}; -\frac{1}{a} \right)$
89	$\begin{cases} \frac{b(x+1)}{a} + \frac{a(y-1)}{b} = a+b \\ a(x-a) - b(y-b) = -(a+b) \end{cases}$	C.E. $a \neq 0 \wedge b \neq 0$ se $a = -b$ indeterminato se $a \neq -b$ $(a-1; b+1)$

90	$\begin{cases} \frac{x-y}{a+b} + \frac{x-y}{a-b} = 2a \\ \frac{3(x-y)}{a+b} + \frac{5(x-y)}{a-b} = 2(4a+b) \end{cases}$	<i>C.E. $a \neq \pm b$ indeterminato</i>
91	$\begin{cases} \frac{x-y+a}{a+b} - \frac{y-x+b}{a-b} = \frac{9a^2 - 2ab - b^2}{a^2 - b^2} \\ x - 2a = -y \end{cases}$	<i>C.E. $a \neq \pm b$ se $a = 0$ indeterminato se $a \neq 0$ (3a; -a)</i>
92	$\begin{cases} \frac{x+y}{b} + \frac{x-y}{a} = \frac{2(a^2 + b^2)}{ab} \\ \frac{x+y}{x-y} = \frac{a}{b} \end{cases}$	<i>C.E. $x \neq y \wedge a \neq 0 \wedge b \neq 0$ (a+b; a-b)</i>