Equazioni di secondo grado

indice

Gli esercizi ed i problemi sono proposti in ordine di difficoltà crescente.

nota: in un file così lungo e complesso può accadere che sia presente un errore di diversa natura nonostante gli esercizi siano stati controllati più volte. Saremo grati di ricevere segnalazioni di eventuali refusi o suggerimenti di qualsiasi natura.

Equazioni di secondo grado intere e frazionarie PASSED

risolvere le seguenti equazioni nell'insieme dei numeri reali

1. equazioni monomie

1	$x^2 = 0$	$3x^2 = 0$
2	$\frac{5}{7}x^2 = 0$	$\frac{2}{3}x^2 = 0$
3	$4x^2 = 0$	$10x^2 = 0$

2. equazioni pure

4	$x^2 - 1 = 0$	± 1
5	$x^2 - 4 = 0$	± 2
6	$3x^2 - 27 = 0$	± 3
7	$x^2 + 1 = 0$	$\nexists\, x \in R$
8	$9x^2 - 4 = 0$	$\pm \frac{2}{3}$
9	$x^2 + 9 = 0$	$\nexists\, x \in R$
10	$3x^2 - 1 = 0$	$\pm \frac{\sqrt{3}}{3}$
11	$125x^2 - 5 = 0$	$\pm \frac{1}{5}$
12	$5x^2 + 125 = 0$	$\nexists x \in R$
13	$4 + 124x^2 = 0$	$\nexists\, x \in R$
14	$7 + 49x^2 = 0$	$\nexists\, x \in R$

15	$5x^2 = 1$	$\pm\frac{\sqrt{5}}{5}$
16	$7 - 49x^2 = 0$	$\pm\frac{\sqrt{7}}{7}$
17	$7 = -3x^2$	$\nexists\, x \in R$
18	$\sqrt{3}x^2 + 1 = 0$	$\nexists\, x \in R$
19	$x^2 - \sqrt{2} = 0$	$\pm\sqrt[4]{2}$
20	$\frac{4}{5}x^2 - 49 = 0$	$\pm\frac{7\sqrt{5}}{2}$
21	$\frac{7}{8}x^2 - 1 = 0$	$\pm\frac{2\sqrt{14}}{7}$
22	$\frac{2}{5}x^2 = \frac{5}{2}$	$\pm\frac{5}{2}$
23	$\frac{3}{2} = \frac{8}{27}x^2$	$\pm\frac{9}{4}$
24	$\frac{1}{2}x^2 - \frac{1}{4} = 0$	$\pm\frac{\sqrt{2}}{2}$
25	$\frac{7}{3}x^2 + \frac{3}{7} = 0$	$\nexists\, x \in R$
26	$-\frac{1}{3}x^2 + \frac{1}{2} = 0$	$\pm\frac{\sqrt{6}}{2}$
27	$\frac{1}{2}(x^2+1) - \frac{4-x^2}{3} = \frac{6x^2+1}{12} - \frac{5}{12}$	$\pm\frac{\sqrt{6}}{2}$
28	$\frac{x^2+3x+2}{10} - \frac{7}{30}x = \frac{x}{3}\left(\frac{1}{5} + \frac{x}{2}\right)$	$\pm\sqrt{3}$

3. equazioni spurie

29	$x^2 - x = 0$	$0;\ 1$
30	$x^2 + 4x = 0$	$-4;\ 0$
31	$5x = 5x^2$	$0;\ 1$
32	$2x + x^2 = 0$	$-2;\ 0$
33	$5x^2 + 10x = 0$	$-2;\ 0$
34	$x - 2x^2 = 0$	$0; 2$
35	$5x - 3x^2 = 0$	$0;\ \frac{5}{3}$
36	$3x^2 + 5x = 0$	$-\frac{5}{3};\ 0$
37	$\frac{7}{9}x^2 - x = 0$	$0;\ \frac{9}{7}$
38	$x^2 + \frac{2}{3}x = 0$	$-\frac{2}{3};\ 0$
39	$\frac{81}{4}x^2 - \frac{9}{2}x = 0$	$0;\ \frac{2}{9}$
40	$\frac{3}{5}x^2 + x = 0$	$-\frac{5}{3};\ 0$
41	$\frac{9}{4}x^2 - \frac{2}{3}x = 0$	$0;\ \frac{8}{27}$
42	$\frac{25}{49}x^2 + x = 0$	$-\frac{49}{25};\ 0$
43	$x^2 = \sqrt{5}x$	$0;\ \sqrt{5}$

44	$\sqrt{2}x^2 = -2x$	$-\sqrt{2};\ 0$
45	$\frac{2}{3}x^2 = \frac{1}{2}x$	$0;\ \frac{3}{4}$
46	$\frac{3}{7}x^2 - \frac{7}{3}x = 0$	$0;\ \frac{49}{9}$
47	$\frac{2}{5}x^2 - \frac{5}{2}x = 0$	$0;\ \frac{25}{4}$
48	$\frac{1}{3}x^2 = \frac{1}{4}x$	$0;\ \frac{3}{4}$
49	$\frac{x^2}{2} - \frac{x}{3} = 0$	$0;\ \frac{2}{3}$
50	$\frac{1-3x}{5} + \frac{6}{5} - x - \frac{1+x^2}{15} = \frac{4-x^2}{3}$	$0;\ 6$
51	$\left(1 - \frac{x}{15}\right)x + \frac{(2-x)(2+x)}{3} = \frac{2}{15} + \frac{3}{5}(2-x)$	$0;\ 4$

4. equazioni complete intere

52	$x^2 - 7x + 10 = 0$	$2\ ;\ 5$
53	$x^2 + 5x + 6 = 0$	$-3;\ -2$
54	$x^2 + 2x - 3 = 0$	$-3;\ 1$
55	$2x^2 + 7x + 3 = 0$	$-3;\ -\frac{1}{2}$
56	$x^2 + x + 12 = 0$	$\nexists\ x \in R$

57	$9x^2 + 12x + 4 = 0$	$-\frac{2}{3}; -\frac{2}{3}$
58	$5x^2 - 2x - 16 = 0$	$-\frac{8}{5}; 2$
59	$2x^2 + 5x - 12 = 0$	$-4; \frac{3}{2}$
60	$25x^2 - 20x + 4 = 0$	$\frac{2}{5}; \frac{2}{5}$
61	$x^2 - 5x + 6 = 0$	$2; 3$
62	$x^2 + x - 12 = 0$	$-4; 3$
63	$x^2 + 7x - 8 = 0$	$-8; 1$
64	$9x^2 - 6x + 1 = 0$	$\frac{1}{3}; \frac{1}{3}$
65	$x^2 - x = 20$	$-4; 5$
66	$3x^2 + 5x + 3 = 0$	$\nexists\, x \in R$
67	$2x^2 = 3x + 2$	$-\frac{1}{2}; 2$
68	$x^2 = x + 2$	$-1; 2$
69	$16x = x^2 + 64$	$8; 8$
70	$9x^2 + 6x + 1 = 0$	$-\frac{1}{3}; -\frac{1}{3}$

71	$10 = 3x^2 + x$	$-2;\ \frac{5}{3}$
72	$x^2 - 3\sqrt{2}x + 4 = 0$	$\sqrt{2};\ 2\sqrt{2}$
73	$3x^2 - x + 1 = 0$	$\nexists\ x \in R$
74	$4x^2 - 4x - 1 = 0$	$\frac{1-\sqrt{2}}{2};\ \frac{1+\sqrt{2}}{2}$
75	$x^2 + 4x + 1 = 0$	$-2-\sqrt{3};\ -2+\sqrt{3}$
76	$x^2 = -x - 2$	$\nexists\ x \in R$
77	$x^2 - (\sqrt{3}+\sqrt{2})x + \sqrt{6} = 0$	$\sqrt{2};\ \sqrt{3}$
78	$(2x+1)^2 - (x-3)^2 = 0$	$-4;\ \frac{2}{3}$
79	$x = (x+2)^2$	$\nexists\ x \in R$
80	$x^2 + (\sqrt{2}-\sqrt{3})x - \sqrt{6} = 0$	$-\sqrt{2};\ \sqrt{3}$
81	$5x^2 - 2x + \frac{1}{5} = 0$	$\frac{1}{5};\ \frac{1}{5}$
82	$\frac{x^2}{4} = \frac{3x-4}{2}$	$2;\ 4$
83	$\frac{3x^2+x}{3} = \frac{1}{12}$	$-\frac{1}{2};\ \frac{1}{6}$
84	$\frac{x(x-2)}{4} = \frac{x+2}{3}$	$-\frac{2}{3};\ 4$

85	$\frac{3}{10}x^2+\frac{1}{2}-\frac{x}{2}-\frac{3}{2}+\frac{2}{5}x=0$	$-\frac{5}{3};\ 2$
86	$\frac{3}{2}x^2-2x+\frac{2}{3}=0$	$\frac{2}{3};\ \frac{2}{3}$
87	$\frac{1}{6}x^2+\frac{8}{3}x+\frac{32}{3}=0$	$-8;\ -8$
88	$2x^2-\frac{1}{6}x+3=0$	$\nexists\, x\in R$
89	$\frac{x^2+2}{2}=(x-2)^2+\frac{x^2-1}{3}$	$\frac{4}{5};\ 4$
90	$\frac{1}{3}(3-x)+\frac{x^2-1}{6}-\frac{2}{3}=0$	$1;\ 1$
91	$\frac{1}{3}(3-x)=\frac{2}{3}+\frac{(1-x)(1+x)}{6}$	$1;\ 1$
92	$\frac{1}{5}x=\frac{1}{5}x^2+\frac{5}{2}$	$\nexists\, x\in R$
93	$\frac{9}{4}x^2+\frac{15}{4}x-x+\frac{4}{3}=\frac{1}{3}-\frac{1}{4}x$	$-\frac{2}{3};\ -\frac{2}{3}$
94	$\frac{2}{3}x^2-\frac{1}{2}=\frac{2}{3}x-\frac{2}{3}$	$\frac{1}{2};\ \frac{1}{2}$
95	$2x^2+\frac{1}{2}x=\frac{9}{4}-\frac{3}{4}x-\frac{3}{2}$	$-1;\ \frac{3}{8}$
96	$\frac{4x+4}{3}-\frac{(x+2)^2}{4}=\frac{4-x^2}{6}$	$2;\ 2$
97	$\frac{2}{3}(x^2-1)-\frac{2-x}{3}=\frac{x^2-3}{2}$	$-1;\ -1$
98	$\frac{x^2}{3}+6(1-x)+\frac{x(x+2)}{2}=\frac{(x-3)x}{3}$	$2;\ 6$

99	$\frac{(x-1)^2}{4}-\frac{x-1}{2}+\frac{1}{4}=0$	$2;\ 2$
100	$(x-1)^3+\frac{5}{4}x=\frac{1}{4}x(2x+1)^2$	$\frac{1}{2};\ \frac{1}{2}$
101	$2x-\frac{x}{2}=\frac{3}{2}+\frac{x^2-2}{4}$	$3\pm\sqrt{5}$
102	$\frac{(1-x)(x-2)}{3}=\frac{x(x+3)}{2}+\frac{x}{6}-\frac{2}{3}x^2$	$-2;\ -2$
103	$x^2-\frac{x-3}{6}+4=3x-2$	$\nexists\, x\in R$
104	$\frac{2-x}{6}+\frac{1-x}{3}+\frac{1}{8}x^2-1-x+\frac{3+2x}{4}+\frac{1+x^2}{4}=0$	$\frac{4}{3};\ \frac{4}{3}$
105	$\left(x+\frac{1}{2}\right)^2=\left(\frac{3}{2}-2x\right)^2$	$\frac{1}{3};\ 2$
106	$\frac{(2x-3)(2x+1)}{2}+5=(4x-1)^2+\frac{9-19x^2}{2}$	$\frac{2}{3};\ \frac{2}{3}$
107	$x^2-4\sqrt{3}x+12=0$	$2\sqrt{3};\ 2\sqrt{3}$
108	$x+\sqrt{5}=(2x-\sqrt{5})(x+\sqrt{5})$	$-\sqrt{5};\ \frac{1+\sqrt{5}}{2}$
109	$x(x+\sqrt{7})=14$	$-2\sqrt{7};\ \sqrt{7}$
110	$2\sqrt{3}x=x^2+2$	$\sqrt{3}-1;\ \sqrt{3}+1$
111	$\frac{x^2}{3}+3x+3=0$	$\frac{-9-3\sqrt{5}}{2};\ \frac{-9+3\sqrt{5}}{2}$
112	$x^2-\frac{1}{2}+\frac{1}{6}x=-\frac{1}{4}$	$\frac{-1-\sqrt{37}}{12};\ \frac{-1+\sqrt{37}}{12}$

113	$x^2 + 16 = 6\sqrt{2}x$	$2\sqrt{2};\ 4\sqrt{2}$
114	$4\sqrt{5}x - 1 = 4x^2$	$\frac{\sqrt{5}-2}{2};\ \frac{\sqrt{5}+2}{2}$
115	$2\left(\frac{1}{2}x - 2\right)^2 - 19\left(\frac{1}{2}x - 3\right) - 4\left(\frac{1}{2}x - 4\right)^2 = \frac{7x-9}{2} - 4x + 10$	$3;\ 3$

5. equazioni frazionarie

116	$\frac{2}{x} = \frac{x}{2}$	± 2
117	$x = \frac{1}{x}$	± 1
118	$x - 1 = \frac{9}{x-1}$	$-2;\ 4$
119	$\frac{3}{x-1} = \frac{2x}{x+1}$	$-\frac{1}{2};\ 3$
120	$\frac{x}{x-2} = \frac{6}{x+5}$	$\nexists\, x \in R$
121	$\frac{1}{x} = \frac{1-4x}{x-4}$	± 1
122	$\frac{x+3}{3} = \frac{x+27}{x}$	± 9
123	$\frac{-2+x}{x+2} - \frac{1}{x-1} = 0$	$0; 4$
124	$\frac{7x^2 + 4x - 1}{x^2} = \frac{5+x}{x}$	$-\frac{1}{3};\ \frac{1}{2}$
125	$\frac{4}{3} + \frac{1}{x-1} = \frac{1+x}{x-1} - \frac{x}{x+1}$	$-\frac{1}{2};\ 2$

126	$\frac{\sqrt{3}}{x} = \frac{x}{\sqrt{27}}$	± 3
127	$\frac{x^2-1}{2x+4} + 1 = \frac{1}{x+2}$	$-1;\ -1$
128	$\frac{2}{x} - \frac{2x}{x+1} = \frac{2-x}{x}$	1 0 *non accettabile*
129	$\frac{x}{x+1} = \frac{4}{x+2}$	$1-\sqrt{5};\ 1+\sqrt{5}$
130	$x - 1 - \frac{1}{x-1} = \frac{6}{6-6x}$	*impossibile*
131	$\frac{x^2+1}{x-1} = 1 + \frac{5-3x}{x-1}$	-3 1 *non accettabile*
132	$\frac{x-1}{x+5} - \frac{1}{x-5} = \frac{14}{x} + \frac{11-x}{5-x}$	$-\frac{10}{3};\ 7$
133	$\frac{x^2+1}{x^2-4} + \frac{2}{x-2} = \frac{3}{x+2}$	*impossibile*
134	$\frac{x^2-1}{2x+4} + 1 = \frac{1}{x+2}$	$-1;\ -1$
135	$-\frac{2}{x+3} = \frac{1}{x^2}$	$\nexists\, x \in R$
136	$\frac{1}{x^2} = \frac{2}{x+3}$	$-1;\ \frac{3}{2}$
137	$\frac{2}{x^2+1} = \frac{1-x^2}{x^2+1}$	$\nexists\, x \in R$
138	$\frac{4}{x} + \frac{4x}{x-3} + \frac{13}{x^2-3x} = 0$	$-\frac{1}{2};\ -\frac{1}{2}$
139	$\frac{x}{x+4} + \frac{x+1}{x} = \frac{x+2}{x^2+4x}$	$-1;\ -1$

140	$\frac{4-25x}{x^2+2x}+3+\frac{3x+1}{x}=0$	$1;1$
141	$\frac{3x+3}{3x+1}=-\frac{2}{3x^2+x}-\frac{1}{x}$	$-1;\ -1$
142	$\frac{1}{x^2}=\frac{2-x}{x}$	$1;1$
143	$\frac{4x-3}{x^2-4}-\frac{3x}{x-2}=\frac{4}{2-x}-\frac{4x}{2+x}$	$1;\ 5$
144	$\frac{4-x}{18-2x^2}+\frac{2}{3-x}=\frac{6x}{4x+12}$	*impossibile*
145	$\frac{2}{x-1}-\frac{3}{4}=\frac{2}{x^2-1}$	$-\frac{1}{3};\ 3$
146	$\frac{x-1}{x}=\frac{1}{x+1}+\frac{2+x}{x^2+x}$	3 -1 *non accettabile*
147	$\frac{x-1}{x}+\frac{1}{x+1}+\frac{2+x}{x^2+x}=0$	*impossibile*
148	$\frac{x-1}{x}+\frac{1}{x+1}=\frac{2+x}{x^2+x}$	$-\sqrt{3};\ \sqrt{3}$
149	$\frac{11-3x}{4(x-1)}=\frac{1+x}{x^2-1}-\frac{1}{x+1}$	$-\frac{1}{3};\ 3$
150	$\frac{1}{x^2-1}+\frac{x+1}{x-1}=\frac{1-x}{x+1}$	$\nexists\ x\in R$
151	$\frac{2}{x+1}+\frac{x}{1-x}=\frac{8}{1-x^2}$	$-2;\ 3$
152	$\frac{3x+2}{x^2+2x}+\frac{1}{x}=\frac{x+1}{x+2}$	$-1;\ 4$
153	$\frac{3x}{x+1}+\frac{x^2}{2x^2+x-1}=\frac{2x}{1-2x}$	$0;\ \frac{1}{9}$

154	$\frac{x^2-11}{x^2+2x-3}+\frac{x}{x-1}=\frac{x+1}{x+3}$	$-5;\ 2$
155	$2=\frac{x-1}{x+3}+\frac{x+2}{x-1}-\frac{x^2-7}{x^2+2x-3}$	$-5; 4$
156	$\frac{4}{x^2-x}-\frac{3}{x-1}=2$	$\frac{-1-\sqrt{33}}{4};\frac{-1+\sqrt{33}}{4}$
157	$\frac{4}{x}+\frac{4x}{x-3}+\frac{13}{x^2-3x}=0$	$-\frac{1}{2};-\frac{1}{2}$
158	$\frac{x+3}{x+2}+\frac{4}{x^2+x-2}=\frac{x+2}{2x-2}$	$\pm\sqrt{2}$
159	$\frac{x+3}{x}-\frac{1}{x^2}=-\frac{1}{x}$	$-2-\sqrt{5}\ ;\ -2+\sqrt{5}$
160	$\frac{3}{x(x-2)}=\frac{4x-2}{x}$	$\frac{5-\sqrt{21}}{4};\frac{5+\sqrt{21}}{4}$

6. esercizi di riepilogo

161	$40x^2-7x-3=0$	$-\frac{1}{5};\frac{3}{8}$
162	$4x(2-x)+(x-2)=-11$	$-\frac{3}{4};\ 3$
163	$(2x-1)^2+4(x-2)(x+2)=-18$	$\nexists\, x\in R$
164	$x\left(x+\sqrt{7}\right)=14$	$-2\sqrt{7};\ \sqrt{7}$
165	$\frac{1}{2}(x-1)+x=(x+1)(x-2)$	$-\frac{1}{2};\ 3$
166	$4+(1+2x)^2=0$	$\nexists\, x\in R$
167	$\left(\sqrt{3}-2x\right)^2=\left(x+\sqrt{3}\right)^2$	$0;\ 2\sqrt{3}$

168	$\frac{1}{3}(3-x)+\frac{x^2-1}{6}-\frac{2}{3}=0$	$1;\ 1$
169	$\sqrt{2}(2x+1)+\left(x-\sqrt{2}\right)^2=x+4$	$1-\sqrt{2};\ \sqrt{2}$
170	$2\sqrt{3}x=x^2+2$	$\sqrt{3}-1;\ \sqrt{3}+1$
171	$\frac{3x+3}{3x+1}=-\frac{2}{3x^2+x}-\frac{1}{x}$	$-1;\ -1$
172	$x+2=\frac{6}{x+2}+1$	$-4;\ 1$
173	$\frac{1}{x+1}+\frac{1}{12}=\frac{1}{1-x}$	$-12-\sqrt{145};\ -12+\sqrt{145}$
174	$\frac{1}{x+\sqrt{3}}+\frac{1}{x-\sqrt{3}}=3$	$\frac{1-2\sqrt{7}}{3};\ \frac{1+2\sqrt{7}}{3}$
175	$\frac{5}{4x}-\frac{9}{4}=\frac{x-3}{x+1}$	$-\frac{5}{13};\ 1$
176	$\frac{x-5}{8}-\frac{x}{5}=\frac{5}{x-10}$	$-\frac{10}{3};\ 5$
177	$\frac{1}{x(2-x)}-\frac{4-x}{x(x+2)}=\frac{2}{4-x^2}$	2 *non accettabile* 3
178	$\frac{1}{x(x+3)}-\frac{1}{x(2-x)}=\frac{1}{6x}$	$-1;\ 12$
179	$\frac{x+2}{x}-\frac{(2+3x)}{2(4-3x)}=1+\frac{4}{3x^2-4x}$	-6 $\frac{4}{3}$ *non accettabile*
180	$\frac{4-25x}{x^2+2x}+3+\frac{3x+1}{x}=0$	$1:1$

181	$\frac{x}{x-6}-\frac{1}{2}=\frac{x}{6}+\frac{x+6}{6-x}$	$-3;\ 18$
182	$\frac{4}{(x-2)^2}+3=\frac{3x}{2-x}$	$\nexists\, x \in R$
183	$\frac{1}{3x-x^2}-\frac{1}{6x}=\frac{1}{2x-x^2}$	$\nexists\, x \in R$
184	$\frac{x-\sqrt{3}}{x\sqrt{3}-1}=\frac{2\sqrt{3}}{3x^2-1}-\frac{x}{x\sqrt{3}+1}$	$-\frac{\sqrt{3}}{2};\ \sqrt{3}$
185	$\frac{4}{(x-2)^2}-\frac{3}{x^2}=\frac{5}{4x-2x^2}$	$\frac{-7-\sqrt{217}}{7};\ \frac{-7+\sqrt{217}}{7}$
186	$\frac{5}{2x+2}+\frac{1}{2x-2}=\frac{3x+2}{x^2+x+1}$	$0;\ 4$
187	$\frac{5}{6+2x}-\frac{1}{x^2-3x}=\frac{5}{9-x^2}$	$-\frac{3}{5};\ 2$
188	$\frac{2}{(x-1)^2}-\left(x-\frac{1}{x-1}\right)\left(x-\frac{1}{x+1}\right)+\left(x-\frac{1}{x-1}\right)^2=0$	$1-\sqrt{3};\ 1+\sqrt{3}$
189	$\frac{1}{x-5}-\frac{1}{4-x}=\frac{2}{x-4}+\frac{1}{x-3}$	$5-\sqrt{2};\ 5+\sqrt{2}$
190	$\frac{x+3}{x+1}+\frac{x+5}{x+2}=\frac{2x+2}{x}$	$-\frac{4}{3};\ 1$
191	$\frac{x^2}{200-x^2}=\frac{1}{7}$	± 5
192	$\frac{2(x-1)}{x+1}+\frac{(x+1)}{4(x-1)}=3$	$\frac{-7-4\sqrt{7}}{3};\ \frac{-7+4\sqrt{7}}{3}$

193	$\frac{x-2}{3-x}+\frac{2x+9}{x^2-9}=\frac{2x+1}{x+3}$	$1-\sqrt{7};\ 1+\sqrt{7}$
194	$\frac{5x^2-5x-28}{x^2-x-6}=\frac{4}{x+2}-\frac{2}{x-3}$	$-1;\ \frac{12}{5}$
195	$\frac{x+3}{x-1}-\frac{1-x}{x+3}=\frac{4x+28}{x^2+2x-3}$	3 -3 *non accettabile*
196	$1-\frac{x-5}{x-2}-\frac{x+1}{x^2-5x+6}=\frac{x-5}{x^2-6x+8}$	$5;\ 5$
197	$\frac{x-1}{x-3}-\frac{x+2}{x+2}=\frac{4x-6}{x}$	$\frac{5-\sqrt{7}}{2};\ \frac{5+\sqrt{7}}{2}$
198	$\frac{x+3}{x-1}-\frac{1-x}{x+3}=\frac{4x+28}{x^2+2x-3}$	3 -3 *non accettabile*
199	$\frac{x+3}{x+2}+\frac{4}{x^2+x-2}=\frac{x+2}{2x-2}$	$+\sqrt{2};\ -\sqrt{2}$
200	$1-\frac{x-5}{x-2}-\frac{x+1}{x^2-5x+6}=\frac{x-5}{x^2-6x+8}$	$5;5$
201	$\frac{3x+2}{2x^2-2x-12}-\frac{3-x}{4x-12}=-\frac{3}{x+2}$	$-19;\ 2$
202	$\frac{x}{x^2-5x+6}+\frac{x}{x^2+x-6}=\frac{1}{x-2}$	*impossibile*
203	$\frac{x-4}{x-2}+\frac{x-1}{x^2-5x+6}=\frac{4-2x}{3-x}$	-1 3 *non accettabile*
204	$\frac{x-3}{x-1}-\frac{4}{3}+\frac{x-1}{x+1}=0$	$3-\sqrt{10};\ 3+\sqrt{10}$