

Disequazioni di secondo grado

1	$x^2 > 0$	$\mathbb{R} - \{0\}$
2	$x^2 \geq 0$	\mathbb{R}
3	$-5x^2 < 0$	$\mathbb{R} - \{0\}$
4	$3x^2 < 0$	<i>impossibile</i>
5	$-\frac{5}{4}x^2 > 0$	<i>impossibile</i>
6	$-5x^2 - 1 > 0$	<i>impossibile</i>
7	$x^2 - 5x < 0$	$0 < x < 5$
8	$3x^2 + 2x \geq 0$	$x \leq -\frac{2}{3} \vee x \geq 0$
9	$6x^2 - 5x \leq 0$	$0 \leq x \leq \frac{5}{6}$
10	$2x - x^2 \leq 0$	$x \leq 0 \vee x \geq 2$
11	$x^2 - 4 > 0$	$x < -2 \vee x > 2$
12	$2x^2 + 13 < 0$	<i>impossibile</i>
13	$x^2 - 9 < 0$	$-3 < x < 3$
14	$x^2 + 1 > 0$	\mathbb{R}
15	$x^2 + \sqrt{2} > 0$	\mathbb{R}
16	$-3x^2 + 5x - 2 > 0$	$\frac{2}{3} < x < 1$
17	$-2x^2 + 7x - 5 \leq 0$	$x \leq 1 \vee x \geq \frac{5}{2}$
18	$-x^2 - 10x - 25 < 0$	$\mathbb{R} - \{5\}$
19	$9x^2 - 6x + 1 < 0$	<i>impossibile</i>
20	$6x - x^2 - 9 > 0$	<i>impossibile</i>
21	$2x^2 - x + 1 > 0$	\mathbb{R}

Disequazioni di secondo grado

22	$x^2 + 3 - x > 0$	\mathbb{R}
23	$4x^2 - 5x < -1$	$\frac{1}{4} < x < 1$
24	$x^2 - 2x + 10 > 0$	\mathbb{R}
25	$2x^2 - 5x - 11 > 0$	$x < \frac{5 - \sqrt{113}}{4} \vee x > \frac{5 + \sqrt{113}}{4}$
26	$x^2 - 3x - 6 < 0$	$\frac{3 - \sqrt{33}}{2} < x < \frac{3 + \sqrt{33}}{2}$
27	$5x^2 - x + 6 < 0$	<i>impossibile</i>
28	$4x^2 - 12x + 9 \leq 0$	$x = \frac{3}{2}$
29	$6x - x^2 - 9 \leq 0$	\mathbb{R}
30	$x^2 + 10x - 9 \geq 0$	$x \leq -5 - \sqrt{34} \cup x \geq -5 + \sqrt{34}$
31	$x^2 + 4x - 21 > 0$	$x < -7 \vee x > 3$
32	$6x^2 + 7x - 3 \geq 0$	$x \leq -\frac{3}{2} \vee x \geq \frac{1}{3}$
33	$4x^2 - 4x + 1 > 0$	$x \neq \frac{1}{2}$
34	$-x^2 + 8x - 16 > 0$	<i>impossibile</i>
35	$2x^2 + x + 4 > 0$	$\forall x \in \mathbb{R}$
36	$25x^2 + 10x + 1 < 0$	<i>impossibile</i>
37	$4x^2 - 3x - 1 > 0$	$x < -\frac{1}{4} \vee x > 1$
38	$x^2 - 8x + 16 < 0$	<i>impossibile</i>
39	$5x^2 - 3x + 1 > 0$	\mathbb{R}
40	$(x - 1)^2 < 0$	<i>impossibile</i>
41	$(2x + 5)(x - 1) < 0$	$-\frac{5}{2} < x < 1$
42	$2x^2 > 3(9 - x)$	$x < -\frac{9}{2}; x > 3$

Disequazioni di secondo grado

43	$9(3x^2 + 2) > 16(x - 3)$	\mathbb{R}
44	$(x - 1)^2 - 2x^2 + 3 > 3x^2 - 2x + 1$	$-\frac{\sqrt{3}}{2} < x < \frac{\sqrt{3}}{2}$
45	$x - 1 < (x + 3)^2 - 4x + 6$	\mathbb{R}
46	$(3x - 2)^2 + 3 < 5x - (2x - 1)^2$	$\frac{8}{13} < x < 1$
47	$3x^2 - 4x + 3 + 2x \leq (2x - 3)^2$	$x \leq 5 - \sqrt{19} \vee x \geq 5 + \sqrt{19}$
48	$11x^2 - 3(4x - 5) > 7(x + 4) - 3x^2$	$x < -\frac{1}{2} \vee x > \frac{13}{7}$
49	$(2x - 3)^2 \leq x^2 - (x + 2)(x - 3)$	$\frac{1}{4} \leq x \leq 3$
50	$(x + 2)^2 - (x + 1)^2 \geq x^2 - 6x + 18$	$3 \leq x \leq 5$
51	$(x - 3)(x^2 - 10x + 22) + (2x - 9)(x - 8) > (x - 4)^3 - 10$	$x < 5 \vee x > 16$
52	$4x^2 - \frac{3}{2}x + (x - 1)^2 < 2(x^2 - 3) + \frac{1}{4}$	<i>impossibile</i>
53	$4x^2 - \frac{3}{2}x < 7(x^2 - 3) + \frac{1}{3}(x - 4)^2$	$x < -2 \cup x > \frac{47}{20}$
54	$3(2x^2 - 1) + (x - 3)^2 - 7x - \frac{2}{3} \leq -x^2 - 1$	<i>impossibile</i>
55	$\left(x - \frac{1}{2}\right)(x + 3) < \frac{x}{2}(x - 2)$	$\frac{-7 - \sqrt{61}}{2} < x < \frac{-7 + \sqrt{61}}{2}$
56	$\left(\frac{x}{2} - \frac{3}{4}\right)x - \frac{x - 3}{2} < \left(\frac{x}{4} - \frac{2}{3}\right)x - \frac{x - 6}{4}$	$0 < x < \frac{4}{3}$
57	$2\left(\frac{x}{3} - 2\right)^2 - \frac{1}{4}x^2 + 3x > -2x + \frac{1}{2}$	$42 - 3\sqrt{226} < x < 42 + 3\sqrt{226}$
58	$\left(x - \frac{2}{3}\right)\left(x - \frac{2}{3}\right) - x^2 + x < -x + \frac{1}{2}x^2$	$x < 6 - 2\sqrt{7} \vee x > 6 + 2\sqrt{7}$
59	$\left(3x - \frac{1}{2}\right) - \left(2x - \frac{1}{3}\right)(x + 1) \leq 6x + \frac{7}{12}$	$x \leq \frac{-14 - \sqrt{142}}{12} \vee x \geq \frac{-14 + \sqrt{142}}{12}$

Disequazioni di secondo grado

60	$x + (x - 3)(x + 3) - \frac{x^2 - 5}{3} - \frac{5}{3} > 0$	$x < -\frac{9}{2} \vee x > 3$
61	$2x - \frac{2x^2 - 5}{3} - 3(x - x^2) - \frac{7}{4} < x^2 - 3x$	$\frac{-3 - \sqrt{10}}{4} < x < \frac{-3 + \sqrt{10}}{4}$
62	$2\sqrt{3}x - 2x^2 - 4x < x^2 - 2$	$x < -\frac{\sqrt{3} + 1}{3} \vee x > \sqrt{3} - 1$
63	$12x^2 + \frac{\frac{x-1}{2}}{\frac{5}{4}} - \frac{5x - \frac{1}{3}}{2} + 3x > -\frac{1}{4}$	$x < -\frac{1}{24} \vee x > -\frac{1}{30}$
64	$\sqrt{3}x^2 - 3x - 2\sqrt{3} < 0$	$\frac{\sqrt{3} - \sqrt{11}}{2} < x < \frac{\sqrt{3} + \sqrt{11}}{2}$
65	$\frac{1}{2}(3x - 1)(3x + 1) < \frac{x^2 - 2}{8} + 1$	$-\sqrt{\frac{2}{7}} < x < \sqrt{\frac{2}{7}}$
66	$(x + 5) \cdot \frac{2x + 13}{3} - x + 6 \cdot \frac{x + 7}{12} < \frac{1}{6} + \frac{(x + 8)^2}{2}$	$-7 < x < 24$
67	$\frac{(\sqrt{3} + \sqrt{6})x}{\sqrt{2}} - \frac{\sqrt{2}x^2 + 6}{2} < 0$	$x < \sqrt{3} \vee x > \sqrt{6}$
68	$\frac{x + 1}{3} - \frac{1}{2} + \frac{3}{4}(x + 2)(x + 3) \geq x \cdot \frac{x + 4}{6}$	$x \leq -4 \vee x \geq -\frac{13}{7}$
69	$\frac{5x - 2}{\frac{1}{2}} - \frac{\frac{2x + 1}{10}}{\frac{1}{5}} + 3x^2 > -x^2 + \frac{x + 1}{\frac{3}{2}}$	$x < \frac{-13 - 7\sqrt{7}}{12} \vee x > \frac{-13 + 7\sqrt{7}}{12}$
70	$x^2 - \frac{3x + 1}{2} + (x + 1)^2 \geq 3(x^2 - 3) - 1 + 3(x - 2)$	$-\frac{11}{2} \leq x \leq 3$
71	$\frac{1}{4} - (x - 2)^2 < \frac{x^2 - (x - 1)^2}{4} - \frac{x^2}{8}$	$x \neq 2$
72	$\frac{x^3}{2} - \frac{7}{10} \leq \frac{(3x + 4)(x - 1)(x + 3)}{6} + 1 - \frac{2}{5}(x + 2)$	$x \leq -\frac{33}{50} \vee x \geq 1$
73	$(x^2 + 1)^2 - \frac{5}{2}x^2 - x + \frac{2}{3} \leq x^4 + 1$	$x \leq -1 - \frac{\sqrt{21}}{3} \vee x \geq -1 + \frac{\sqrt{21}}{3}$
74	$-x^2 - 3x > x^2 + 5 - (x + 3)^2$	$-1 < x < 4$

Disequazioni di secondo grado

75	$\frac{2(2x-1)^2 - 3(x-1)}{12} + \frac{x^2 + 3 + 4x}{6} \geq 1$	$x \leq -\frac{1}{5} \vee x \geq \frac{1}{2}$
76	$\frac{-x^2 + 9x - 14}{2x^2 - 5x - 3} < 0$	$x < -1; 2 < x < 3; x > 7$
77	$\frac{x^2 - 3x + 2}{x^2 - 7x + 12} > 1$	$\frac{5}{2} < x < 3; x > 4$
78	$\frac{2x^2 - x + 3}{-3x^2 + 16x - 5} > 0$	$\frac{1}{3} < x < 5$
79	$\frac{-9x^2 - 12x - 4}{2x^2 - 5x + 2} > 0$	$\frac{1}{2} < x < 2$
80	$\frac{3x^2 + 5x - 2}{3x^2 - x - 14} > \frac{1}{2}$	$x < -\frac{5}{5}; x > \frac{7}{3}$
81	$\frac{x^2 - 5x + 12}{-x^2 + 4x - 4} > 0$	<i>impossibile</i>
82	$\frac{x^2 - 5x + 6}{x^2 - 3x - 10} > 0$	$x < -2; 2 < x < 3; x > 5$
83	$\frac{7x + 6}{6} + \frac{(3 + 2x)^2}{3} < 3 + \frac{(x + 1)(x + 4)}{4}$	$-\frac{47}{13} < x < 0$
84	$\frac{(x - 2)(3 - x)}{8} \geq \frac{x - 1}{4} + \frac{3}{4}$	<i>impossibile</i>
85	$2 + \frac{5}{x - 5} < -2 - \frac{3}{6x - x^2 - 5}$	$\frac{3}{4} < x < 1 \vee 4 < x < 5$
86	$\frac{1}{x - 5} - \frac{2}{x + 3} < \frac{1 - 2x}{x^2 - 2x - 15}$	$x < -12 \vee -3 < x < 5$
87	$\frac{3x - 1}{x(x - 1)} - \frac{2}{x - 1} \leq \frac{x + 5}{x^2 - x}$	$x < 0 \vee x > 1$
88	$\frac{x}{x + 1} + \frac{15}{x^2 - 1} \geq 3 - \frac{18}{5(x - 1)}$	$-\frac{27}{10} \leq x < -1 \vee 1 < x \leq 4$