Disequazioni di vario tipo

	più impegnative	
1	$x^2 + 5x + 4 < 5\sqrt{x^2 + 5x + 28}$	$-9 < x < 4$
2	$1 - \cos x \geq \sqrt{\sin x}$	$\frac{\pi}{2} + 2k\pi \leq x \leq \pi + 2k\pi \ \lor \ x = 2k\pi$
3	$\dfrac{1}{(x-1)^3} + \dfrac{1}{x^3} \leq 0$	$x < 0 \ \lor \ \dfrac{1}{2} \leq x < 1$
4	$\sqrt{\dfrac{x^2 + 8|x| - 9}{x^2 - 1}} \geq x - 3$	$x \leq \dfrac{5 + \sqrt{17}}{2}$
5	$3 \log_{\frac{1}{2}}(x-1) < 2 \log_{\frac{1}{2}} x + \log_{\frac{1}{2}}(x-3)$	$x > 3$
6	$\dfrac{x^2 + 4x + 2}{x + 1} > \sqrt{x^2}$	$-2 < x < -1 \ \lor \ x > -\dfrac{1}{2}$
7	$\sqrt{13^x - 5} \leq \sqrt{2(13^x + 12)} - \sqrt{13^x + 5}$	$\log_{13} 5 \leq x \leq 1$
8	$\sin 2x > \cos x$	$\frac{\pi}{6} + 2k\pi < x < \frac{\pi}{2} + 2k\pi \ \lor$ $\frac{\pi}{2} + 2k\pi < x < \frac{5}{6}\pi + 2k\pi$
9	$\sqrt{2 \log_2 x + 3} \geq \log_2 x$	$\dfrac{1}{2\sqrt{2}} \leq x \leq 8$
10	$x^4 + 5x^3 + x^2 - 11x + 4 \geq 0$	$x \leq -4 \ \lor \ -1-\sqrt{2} \leq x \leq -1+\sqrt{2} \ \lor \ x \geq 1$

11	$2^x > 2 + 2^{-x}$	$x > \log_2(\sqrt{2} + 1)$
12	$x^3 - 11x^2 + 10x \leq 0$	$x \leq 0 \ \vee \ 1 \leq x \leq 10$
13	$\dfrac{x^2 - 3x - 18}{x^3 - 12x^2 + 32x} \leq 0$	$x \leq -3 \ \vee \ 0 < x < 4 \ \vee \ 6 \leq x < 8$
14	$\dfrac{a^x \sqrt{a^{2+x}}}{\sqrt[3]{a^{x-1}}} > a^2$	$se\ a < 1 \quad x > \dfrac{4}{7}$ $se\ 0 < a < 1 \quad x < \dfrac{4}{7}$
15	$(x+3)^3(4-x^2)^4(-x^2+6x-5)^5 \geq 0$	$x \leq -3 \ \vee \ x = -2 \ \vee \ 1 \leq x \leq 5$
16	$2x + 1 > \sqrt{4x^2 - 9x + 2}$	$\dfrac{1}{13} < x \leq \dfrac{1}{4} \ \vee \ x \geq 2$
17	$\tan x > \cot x$	$\dfrac{\pi}{4} + k\dfrac{\pi}{2} < x < \dfrac{\pi}{2} + k\dfrac{\pi}{2}$
18	$x^3 - 2x^2 - x + 2 \geq 0$	$-1 \leq x \leq 1 \ \vee \ x \geq 2$
19	$\dfrac{2e^{2x} - 6e^x + 2 + \dfrac{x}{|x|}}{\sqrt{1 - (e^x - 1)^2}} \leq 0$	$\ln\left(\dfrac{3 - \sqrt{7}}{2}\right) \leq x < \ln 2 \ \wedge \ x \neq 0$
20	$\dfrac{(3\ln x - 1) - 3\sqrt[3]{3\ln x - 1} - 2}{\sqrt[3]{3\ln x - 1}} \leq 0$	$\sqrt[3]{e} < x \leq e^3$

21	$-6x^2 - |x| + 1 > 0$	$-\dfrac{1}{3} < x < \dfrac{1}{3}$
22	$\cos(x + |x|) > 0$	$x < 0 \ \ \vee \ \ -\dfrac{\pi}{4} + k\pi < x < \dfrac{\pi}{4} + k\pi$
23	$\sqrt{\dfrac{2}{x} + |1 + x|} < 1$	$-(1 + \sqrt{3}) < x \leq -2$
24	$\dfrac{\cos x + 2\cos^2 x + \cos 3x}{\cos x + 2\cos^2 x - 1} > 1$	$-\dfrac{\pi}{3} + 2k\pi < x < \dfrac{\pi}{3} + 2k\pi$
25	$\dfrac{\ln(x - 2)}{\sqrt{1 + \ln(x - 2)}} < 2$	$\dfrac{1}{e} + 2 < x < 2 + e^{2(1+\sqrt{2})}$
26	$\left| \dfrac{3^{2x} - 1}{3^{2x} + 1} \right| < 1$	R
27	$\dfrac{1 - 2\sin x}{1 + 2\cos x} \leq 0$	$-\pi + 2k\pi < x < -\dfrac{2}{3}\pi + 2k\pi \ \vee$ $\dfrac{\pi}{6} + 2k\pi \leq x < \dfrac{2}{3}\pi + 2k\pi \ \vee$ $\dfrac{5}{6}\pi + 2k\pi \leq x \leq \pi + 2k\pi$
28	$\dfrac{\sin x}{\sqrt{1 - 2\sin x}} > 1, \qquad x \in [0, 2\pi]$	$\dfrac{\pi}{8} + 2k\pi < x < \dfrac{\pi}{6} + 2k\pi \ \vee$ $\dfrac{5}{6}\pi + 2k\pi < x < \dfrac{7}{8}\pi + 2k\pi$
29	$\dfrac{\log_{\frac{3}{10}} |x - 2|}{x^2 - 4x} < 0$	$x < 0 \ \vee \ 1 < x < 2 \ \vee \ 2 < x < 3 \ \vee \ x > 4$
30	$6\sin^2 x - \sin x \cos x - \cos^2 x > 2$	$\dfrac{\pi}{4} + k\pi < x < \pi - arctg\dfrac{3}{4} + k\pi$

31	$\dfrac{\sqrt{|1 - e^x| - 1}}{e^x - 4} \geq 1$	$\ln 4 < x \leq \ln 6$
32	$\dfrac{\tan^2 x - \sqrt{3}\tan x}{\tan^2 x - 1} < 1, \qquad x \in [0, \pi]$	$0 \leq x < \dfrac{\pi}{6} \ \vee \ \dfrac{\pi}{4} < x < \dfrac{\pi}{2} \ \vee \ \dfrac{3}{4}\pi < x \leq \pi$
33	$\dfrac{1 - \ln(x^2 + x)}{\ln(x-1)^2 - 1} \geq -1$	$x < -1 \ \vee \ \dfrac{1}{3} \leq x < 1 + \sqrt{e}$
34	$2^{\sqrt{\frac{x^2 - 4}{2x^2 - 5x + 3}}} < \sqrt{2}$	$\dfrac{-5 - \sqrt{177}}{4} < x \leq -2 \ \vee \ 2 \leq x < \dfrac{-5 + \sqrt{177}}{4}$
35	$\dfrac{3x + 1 - |5 - x|}{x + 2 + \sqrt{4 - x}} \geq 0$	$x < -5 \ \vee \ 1 \leq x \leq 4$
36	$\ln \dfrac{\sqrt[3]{x^2} - 4}{\sqrt[3]{x} - 1} \leq \ln \sqrt[3]{|x|}$	$8 < x \leq 64$
37	$\log_{\frac{1}{2}} \dfrac{\sqrt[3]{x} + 2}{\sqrt[3]{x} - 1} \geq \log_{\frac{1}{2}}\left(\sqrt[3]{x} + 3\right)$	$x \geq -8 + 3\sqrt{21}$
38	$\sqrt[3]{8x^3 - 32x^2 + 65x - 21} > 2x - 3$	$x < -2 \ \vee \ x > -\dfrac{3}{4}$
39	$\dfrac{5 + x + \sqrt{1 - x}}{x^2 - 1} > \dfrac{2}{x - 1}$	$x < -1$
40	$\dfrac{\ln(|x| - 1)}{x} < 0$	$x < -2 \ \vee \ 1 < x < 2$
41	$\sqrt{2x + \sqrt{6x^2}} < x + 1$	$-\dfrac{\sqrt{3} - 1}{\sqrt{2}} < x < \dfrac{\sqrt{3} - 1}{\sqrt{2}} \ \vee \ x > \dfrac{\sqrt{3} + 1}{\sqrt{2}}$
42	$\dfrac{2^{x+1} - 7}{x - 1} < \dfrac{10}{3 - 2x}$	$1 < x < \dfrac{3}{2}$

43	$\dfrac{\sqrt{x^2 + 4x + 4} - |2x - 1|}{1 - \sqrt[3]{x^2 - 8}} < 0$	$-3 < x < -2\sqrt{2}$
44	$\dfrac{log_2(\sqrt{4x + 5} - 1)}{log_2(\sqrt{4x + 5} + 11)} > \dfrac{1}{2}$	$x > 5$
45	$|x - 1|^{log_2(4-x)} > |x - 1|^{log_2(1+x)}$	$-1 < x < 0 \ \vee \ \dfrac{3}{2} < x < 2$
46	$\dfrac{3 - |x^2 - 4|}{\sqrt[3]{x^3 - 8}} \le 0$	$x \ge \sqrt{7}$
47	$\dfrac{ln|cos\,x|}{cos^2 x - |cos\,x| + 1} \ge 0$	$x = k\pi$
48	$\dfrac{e^{2x} - e^x}{2e^{2x} - 5e^x + 2} > -1$	$x < ln\dfrac{3 - \sqrt{3}}{3} \ \vee \ ln\dfrac{1}{2} < x < ln\dfrac{3 + \sqrt{3}}{3} \ \vee \ x > ln\,2$
49	$log\left(\sqrt{|x|} - 1\right) < log\,2$	$-9 < x < -1 \vee 1 < x < 9$
50	$\dfrac{2x^2 - 1}{|x| - 1} > \sqrt{x} + 1$	$x > 1$
51	$\begin{cases} 4^{sin\,2x} \le 1 \\ 3^{|sin\,x - cos\,x|} \le 3 \end{cases}$	$x = \dfrac{\pi}{2} + k\pi$
52	$\begin{cases} \dfrac{e^{cos\,x}}{e^{\sqrt{3}}} > \left[(e)^{-\sqrt{3}}\right]^{sin\,x} \\ \left(\dfrac{1}{4}\right)^{(cos\,x)^2} > \dfrac{1}{2} \end{cases} \quad (0 \le x \le \pi)$	$\dfrac{\pi}{4} < x < \dfrac{\pi}{2}$

L'ordine con cui sono presentate le disequazioni è puramente casuale