Disequazioni goniometriche fratte

1	$\frac{sen\,x}{1+2\,cos\,x} > 0$	$2k\pi < x < \frac{2}{3}\pi + 2k\pi \ \vee \ \pi + 2k\pi < x < \frac{4}{3}\pi + 2k\pi$
2	$\frac{1+tan\,x}{cos\,x} \geq 0$	$2k\pi \leq x \leq \frac{3}{4}\pi + 2k\pi \wedge x \neq \frac{\pi}{2} + 2k\pi \ \vee$ $\frac{7}{4}\pi + 2k\pi \leq x \leq 2\pi + 2k\pi$
3	$\frac{2\,sen\,x+\sqrt{2}}{cos\,x} < 0$	$\frac{\pi}{2} + 2k\pi < x < \frac{5}{4}\pi + 2k\pi \vee$ $\frac{3}{2}\pi + 2k\pi < x < \frac{7}{4}\pi + 2k\pi$
4	$\frac{2\,sen\,x+1}{2\,cos\,x+\sqrt{2}} \geq 0$	$2k\pi \leq x < \frac{3}{4}\pi + 2k\pi \vee \frac{7}{6}\pi + 2k\pi \leq < \frac{5}{4}\pi + 2k\pi \vee$ $\frac{11}{6}\pi + 2k\pi \leq x \leq 2\pi + 2k\pi$
5	$\frac{3\,cot\,x+\sqrt{3}}{2\,cos\,x-\sqrt{3}} > 0$	$2k\pi \leq x < \frac{\pi}{6} + 2k\pi \vee \frac{2}{3}\pi + 2k\pi < x < \pi + 2k\pi \ \vee$ $\frac{5}{3}\pi + 2k\pi < x < \frac{11}{6}\pi + 2k\pi$
6	$\frac{1-cos\,x}{cos\,2x} \geq 0$	$-\frac{\pi}{4} + k\pi \leq x \leq \frac{\pi}{4} + k\pi$
7	$\frac{3\,tan\,x-\sqrt{3}}{2\,sen\,x-1} \geq 0$	$\left(2k\pi \leq x < \frac{\pi}{2} + 2k\pi \wedge x \neq \frac{\pi}{6} + 2k\pi\right) \vee$ $\frac{5}{6}\pi + 2k\pi < x \leq \frac{7}{6}\pi + 2k\pi \vee$ $\frac{3}{2}\pi + 2k\pi < x \leq 2\pi + 2k\pi$
8	$\frac{2\,cos\,x+\sqrt{3}}{tan\,x-1} < 0$	$\left(2k\pi \leq x < \frac{\pi}{2} + 2k\pi \wedge x \neq \frac{\pi}{4} + 2k\pi\right) \vee$ $\frac{7}{6}\pi + 2k\pi < x < \frac{5}{4}\pi + 2k\pi \vee$ $\frac{3}{2}\pi + 2k\pi < x \leq \pi + 2k\pi$
9	$\frac{2\,sen\,x-\sqrt{3}}{sen\,x+1} > 0$	$\frac{\pi}{3} + 2k\pi < x < \frac{2}{3}\pi + 2k\pi$
10	$\frac{\sqrt{2}-2\,cos\,x}{2\,sen\,x-\sqrt{2}} < 0$	$\frac{3}{4}\pi + k\pi < x < \frac{7}{4}\pi + 2k\pi$
11	$\frac{1-sen\,x}{1-2\,cos\,2x} \geq 0$	$\frac{\pi}{6} + k\pi < x < \frac{5}{6}\pi + k\pi$
12	$\frac{\sqrt{3}-cot\,x}{3\,cot\,x-\sqrt{3}} \geq 0$	$\frac{\pi}{6} + k\pi \leq x < \frac{\pi}{3} + k\pi$
13	$\frac{1+\sqrt{2}\,cos(x+\frac{\pi}{6})}{sen\,x} \leq 0$	$\frac{7}{12}\pi + 2k\pi \leq x < \pi + 2k\pi \vee$ $\frac{13}{12}\pi + 2k\pi \leq x < 2\pi + 2k\pi$

Disequazioni goniometriche fratte

14	$\frac{sen(x+\frac{\pi}{4})}{\sqrt{3}-2\cos x}>0$	$\frac{\pi}{6}+2k\pi<x<\frac{3}{4}\pi+2k\pi \vee \frac{7}{4}\pi+2k\pi<x<\frac{11}{6}\pi+2k\pi$
15	$\frac{2\cos(x-\frac{\pi}{3})+\sqrt{3}}{2\cos x-1}<0$	$\frac{\pi}{3}+2k\pi<x<\frac{7}{6}\pi+2k\pi \vee \frac{3}{2}\pi+2k\pi<x<\frac{5}{3}\pi+2k\pi$
16	$\frac{1-sen(x-\frac{\pi}{4})}{\cos x+1}\geq 0$	$x\neq\pi+2k\pi$
17	$\frac{1}{1-sen\,x}>2$	$\frac{\pi}{6}+2k\pi<x<\frac{5}{6}\pi+2k\pi \wedge x\neq\frac{\pi}{2}+2k\pi$
18	$\frac{tan^2 x-\tan x}{4\,sen^2 x-1}>0$	$2k\pi<x<\frac{\pi}{6}+2k\pi \vee \frac{\pi}{4}+2k\pi<x<\frac{\pi}{2}+2k\pi \vee \frac{5}{6}\pi+2k\pi<x<\frac{\pi}{2}+2k\pi$
19	$\frac{\cot x}{1-tan^2 x}<0$	$\frac{\pi}{4}+k\pi<x<\frac{\pi}{2}+k\pi \vee \frac{3}{4}\pi+k\pi<x<\pi+k\pi$
20	$\frac{sen\,x}{1+sen\,x}>2$	$\emptyset$
21	$\frac{2\cos\frac{x}{2}-1}{1+sen\,x}>0$	$-\frac{2}{3}\pi+4k\pi<x<\frac{2}{3}\pi+4k\pi \wedge x\neq\frac{3}{2}\pi+4k\pi$
22	$\frac{2\cos^2 x-\cos x}{sen\,x}>0$	$2k\pi<x<\frac{\pi}{3}+2k\pi \vee \frac{\pi}{2}+2k\pi<x<\pi+2k\pi \vee \frac{3}{2}\pi+2k\pi<x<\frac{5}{3}\pi+2k\pi$
23	$\frac{3-4\cos^2 x}{2\,sen\,2x-\sqrt{2}}<0$	$\frac{\pi}{8}+k\pi<x<\frac{\pi}{6}+k\pi \vee \frac{3}{8}\pi+k\pi<x<\frac{5}{6}\pi+k\pi$
24	$\frac{sen\,x-2\,sen^2 x}{2\,sen\,x-1}\leq 0$	$2k\pi\leq x\leq\pi+2k\pi \wedge x\neq\frac{\pi}{6}+2k\pi \wedge x\neq\frac{5}{6}\pi+2k\pi$
25	$\frac{sen^2 x+2\cos x-2}{3-\cos^2 x-sen\,x}\geq 0$	$x=2k\pi$
26	$\frac{\cos x-\frac{1}{2}}{2\,sen^2 x-1}\leq 0$	$-\frac{\pi}{4}+2k\pi<x<\frac{\pi}{4}+2k\pi \vee \frac{\pi}{3}+2k\pi\leq x<\frac{3}{4}\pi+2k\pi \vee \frac{5}{4}\pi+2k\pi<x\leq\frac{5}{3}\pi+2k\pi$

Disequazioni goniometriche fratte

27	$\frac{\sqrt{3}\,sen\,x+cos\,x}{cos^2 x-cos\,x}\leq 0$	$2k\pi<x<\frac{\pi}{2}+2k\pi \vee \frac{5}{6}\pi+2k\pi\leq x<\frac{3}{2}\pi+2k\pi \vee \frac{11}{6}\pi+2k\pi\leq x<2\pi+2k\pi$
28	$\frac{4\,sen^2 x-11\,sen\,x+3+2(1-sen^2 x)}{cos\,x}\geq 0$	$-\frac{\pi}{2}+2k\pi<x\leq\frac{\pi}{6}+2k\pi \vee \frac{\pi}{2}+2k\pi<x\leq\frac{5}{6}\pi+2k\pi$
29	$\frac{2\,sen\,x-sen\,x\,cos\,x}{tan\,x}\leq 1$	$x\neq k\pi$
30	$\frac{cos\,x+\frac{\sqrt{3}}{2}}{sen\,x\,cos\,x+sen\,x}\geq 0$	$2k\pi<x\leq\frac{5}{6}\pi+2k\pi \vee \pi+2k\pi<x\leq\frac{7}{6}\pi+2k\pi$
31	$\frac{sen\,x\,(2sen\,x-1)}{2\,cos^2 x}\geq 0$	$\left(\frac{\pi}{6}+2k\pi\leq x\leq\frac{5}{6}\pi+2k\pi\wedge x\neq\frac{\pi}{2}+2k\pi\right)\vee(\pi+2k\pi\leq x\leq 2\pi+2k\pi\wedge x\neq\frac{3}{2}\pi+2k\pi)$
32	$\frac{2\,sen\,x\,cos\,x+sen\,x}{sen\,x+cos\,x}\leq 0$	$\frac{2}{3}\pi+2k\pi\leq x<\frac{3}{4}\pi+2k\pi \vee \pi+2k\pi\leq x\leq\frac{4}{3}\pi+2k\pi \vee \frac{7}{4}\pi+2k\pi<x\leq 2\pi+2k\pi$
33	$\frac{4\,sen\,x}{3-4\,sen^2 x}\leq 0$	$\frac{\pi}{3}+2k\pi<x<\frac{2}{3}\pi+2k\pi \vee \pi+2k\pi\leq x<\frac{4}{3}\pi+2k\pi \vee \frac{5}{3}\pi+2k\pi<x\leq 2\pi+2k\pi$
34	$\frac{sen\,x+1}{tan^2 x}\geq -1$	$\forall x\in\mathbb{R}$
35	$\frac{sen\,x\,(2\,sen\,x+1)}{\frac{cos^2 x-sen^2 x}{cos^2 x}}\geq 0$	$2k\pi\leq x<\frac{\pi}{4}+2k\pi \vee \frac{3}{4}\pi+2k\pi<x\leq\pi+2k\pi \vee \frac{7}{6}\pi+2k\pi\leq x<\frac{5}{4}\pi+2k\pi \vee \frac{7}{4}\pi+2k\pi<x\leq\frac{11}{6}\pi+2k\pi \vee \frac{\pi}{2}+k\pi$
36	$\frac{\cos x}{1+\cos x}>tan^2\frac{x}{2}$	$-\frac{\pi}{3}+2k\pi<x<\frac{\pi}{3}+2k\pi$
37	$\frac{sen\left(\frac{\pi}{2}-x\right)}{1+cos\left(\frac{\pi}{2}-x\right)}>2-cot\left(\frac{\pi}{2}-x\right)$	$\frac{\pi}{3}+2k\pi<x<\frac{\pi}{2}+2k\pi \vee \frac{3}{2}\pi+2k\pi<x<\frac{5}{3}\pi+2k\pi$
38	$\frac{\sqrt{3}\,sen\,x+cos\,x\,(cos\,x-1)}{cos^2 x}\leq 1$	$-\frac{5}{6}\pi+2k\pi\leq x\leq\frac{\pi}{6}+2k\pi\wedge x\neq\frac{3}{2}\pi+2k\pi$

Disequazioni goniometriche fratte

39	$\frac{sen\,2x - tan\,x}{\frac{cos^2 x + 3\,sen^2 x}{sen^2 x}} \leq 0$	$\frac{\pi}{4} + k\frac{\pi}{2} \leq x < \frac{\pi}{2} + k\frac{\pi}{2}$
40	$\frac{1 - sen\,x - 2\,cos\,x}{cos\,x} > -tan\,x$	$\frac{\pi}{3} + 2k\pi < x < \frac{\pi}{2} + 2k\pi \vee \frac{3}{2}\pi + 2k\pi < x < \frac{5}{3}\pi + 2k\pi$
41	$\frac{4\,cos^2\frac{x}{2} - 2\,sen^2\frac{x}{2} - cos\,x - 2}{1 - sen^2 x} \geq 0$	$2k\pi \leq x \leq \frac{\pi}{3} + 2k\pi \vee$ $\frac{5}{3}\pi + 2k\pi \leq x \leq 2\pi + 2k\pi$
42	$\frac{cos\left(\frac{\pi}{4} - x\right)}{4tan\,x - (1 - 3\,tan\,x)} < 0$	$-\frac{\pi}{4} + 2k\pi \leq x < \frac{\pi}{4} + 2k\pi \vee$ $\frac{\pi}{2} + 2k\pi < x < \frac{3}{4}\pi + 2k\pi \vee$ $\frac{5}{4}\pi + 2k\pi < x < \frac{3}{2}\pi + 2k\pi$
43	$\frac{4cot^2 x - 3(1 + cot^2 x)}{2\,cos^2 x - 1} \geq 0$	$\left(-\frac{\pi}{6} + k\pi \leq x \leq \frac{\pi}{6} + k\pi \wedge x \neq \pi + k\pi\right) \vee$ $\frac{\pi}{4} + k\pi < x < \frac{3}{4}\pi + k\pi$
44	$\frac{(cos\,x + 1)(2\,sen\,x + 1)}{cos\,x - \frac{\sqrt{3}}{3}sen\,x} < 0$	$\frac{\pi}{3} + 2k\pi < x < \frac{7}{6}\pi + 2k\pi \vee$ $\frac{4}{3}\pi + 2k\pi < x < \frac{11}{6}\pi + 2k\pi \wedge$ $x \neq \pi + 2k\pi$
45	$\frac{sen\,2x\,(3 - 4\,sen^2 x)}{sen\,x} \geq 0$	$2k\pi < x \leq \frac{\pi}{3} + 2k\pi \vee \frac{\pi}{2} + 2k\pi \leq x \leq \frac{2}{3}\pi + 2k\pi \vee$ $\frac{4}{3}\pi + 2k\pi \leq x \leq \frac{3}{2}\pi + 2k\pi \vee$ $\frac{5}{3}\pi + 2k\pi \leq x < 2\pi + 2k\pi$
46	$\frac{\lvert\,sen\,x\,\rvert}{6\,cos\,x + 3 - 4(cos\,x + 1)} \geq 0$	$-\frac{\pi}{3} + 2k\pi < x < \frac{\pi}{3} + 2k\pi$
47	$\frac{\lvert cos\,x\rvert + 1}{4\,sen\,x - 2\sqrt{3}} < 0$	$2k\pi \leq x < \frac{\pi}{3} + 2k\pi \vee \frac{2}{3}\pi + 2k\pi < x \leq 2\pi + 2k\pi$ $x \neq \pi + 2k\pi$
48	$\frac{2\,sen^2 x - 1}{\lvert cos\,x\rvert} > tan\,x$	$\frac{\pi}{2} + 2k\pi < x < \frac{5}{6}\pi + 2k\pi \vee$ $\frac{3}{2}\pi + 2k\pi < x < \frac{11}{6}\pi + 2k\pi$
49	$\frac{senx - cosx}{senx + cosx} < 0$	$2k\pi < x < \frac{\pi}{4} + 2k\pi\ ;\ \frac{3}{4}\pi + 2k\pi < x < \frac{5}{4}\pi + 2k\pi;$ $\frac{7}{4}\pi < x < 2(k+1)\pi$
50	$\frac{senx}{1 - 2senx} > 0$	$2k\pi < x < \frac{\pi}{6} + 2k\pi\ ;\ \frac{5}{6}\pi + 2k\pi < x < \pi + 2k\pi;$

Disequazioni goniometriche fratte

51	$\frac{cos2x + cosx - 1}{cos2x} > 2$	$-\frac{3}{4}\pi + 2k\pi < x < -\frac{\pi}{2} + 2k\pi$; $-\frac{\pi}{3} + 2k\pi < x < \frac{\pi}{4} + 2k\pi$; $\frac{\pi}{4} < x < \frac{\pi}{3} + 2k\pi$; $\frac{\pi}{2} + 2k\pi < x < \frac{3}{4}\pi + 2k\pi$
52	$\left\|\frac{cos\,2x}{senx}\right\| < 1\ ;\ x \in [0,2\pi]$	$\frac{\pi}{6} < x < \frac{\pi}{2}$; $\frac{\pi}{2} < x < \frac{5}{6}\pi$; $\frac{7}{6}\pi < x < \frac{3}{2}\pi$; $\frac{3}{2}\pi < x < \frac{11}{6}\pi$
53	$\frac{(x-1)senx}{(x+2)^2} > 0$	$1 < x < \pi\ ;\ 2k\pi < x < 2(k+1)\pi,\ k \in \mathbb{Z} \wedge k \geq 1$; $2(k-1)\pi < x < 2k\pi,\ k \in \mathbb{Z}^- \wedge x \neq 2$
54	$\frac{senx + cosx}{tgx - 1} \geq 0$	$\frac{\pi}{4} + 2k\pi < x < \frac{\pi}{2} + 2k\pi$; $\frac{3}{4}\pi + 2k\pi \leq x < \frac{5}{4}\pi + 2k\pi$; $\frac{3}{2}\pi + 2k\pi < x \leq \frac{7}{4}\pi + 2k\pi$
55	$\frac{senx + cosx}{tgx - cotgx} > 0$	$\frac{\pi}{4} + 2k\pi < x < \frac{\pi}{2} + 2k\pi$; $\pi + 2k\pi < x < \frac{5}{4}\pi + 2k\pi$; $\frac{3}{2}\pi + 2k\pi < x < 2\pi + 2k\pi$
56	$\frac{cosx}{\sqrt{2}cosx - 1} > \frac{1}{\sqrt{2}}$;	$-\frac{\pi}{3} + 2k\pi < x < \frac{\pi}{3} + 2k\pi$
57	$tg\frac{1}{x^2+1} \geq 1$	$-\sqrt{\frac{4-\pi}{\pi}} \leq x \leq \sqrt{\frac{4-\pi}{\pi}}$
58	$\frac{2tg\frac{x}{2} + \frac{senx}{1+cosx} - \sqrt{3}}{1 - senx} > 0$	$\frac{\pi}{3} + 2k\pi < x < \pi + 2k\pi \wedge x \neq \frac{\pi}{2} + 2k\pi$
59	$\frac{4tgx - \frac{1}{cos^2 x}}{\lvert 16x^2 - 24\pi x + 5\pi^2 \rvert} > 0$	$\frac{\pi}{12} + k\pi < x < \frac{5}{12}\pi + k\pi \wedge x \neq \frac{\pi}{4} \wedge x \neq \frac{5}{4}\pi$
60	$\left\|\frac{tg2x}{cotgx}\right\| < 1$	$-\frac{\pi}{6} + k\pi < x < \frac{\pi}{6} + k\pi$
61	$\frac{cos2\sqrt{x} - sen\sqrt{x}}{sen2\sqrt{x} - sen\sqrt{x}} > 0, x \in [0, 4\pi^2]$	$\frac{\pi^2}{36} < x < \frac{\pi^2}{9}$; $\frac{25}{36}\pi \leq x \leq \pi^2$; $\frac{25}{9}\pi^2 \leq x \leq 4\pi^2$
62	$\frac{4sen^2 x - 3}{senx} > 2\frac{cosx}{\lvert senx \rvert}$	$\frac{2}{5}\pi + 2k\pi < x < \frac{4}{5}\pi + 2k\pi$; $-\pi + 2k\pi < x < -\frac{3}{5}\pi + 2k\pi$; $-\frac{1}{5}\pi + 2k\pi < x < 2k\pi$

Disequazioni goniometriche fratte

63	$\frac{1-senx}{1-2senx} < \frac{1+senx}{1-4sen^2x}$	$2k\pi < x < \frac{\pi}{6} + 2k\pi$; $\frac{5}{6}\pi + 2k\pi < x < \pi + 2k\pi$; $\pi + 2k\pi < x < \frac{7}{6}\pi + 2k\pi$; $\frac{11}{6}\pi + 2k\pi < x < 2\pi + 2k\pi$
64	$\frac{1+\lvert\sin x\rvert}{\tan x} < 0$	$-\frac{\pi}{2} + k\pi < x < k\pi$
65	$\frac{\sqrt{2}\tan x}{1-\sin^3 x} > 0$	$k\pi < x < \frac{\pi}{2} + k\pi$
66	$\frac{\sqrt{3}\cot x}{\cos(2x)} > 0$	$k\pi < x < \frac{\pi}{4} + k\pi$; $-\frac{\pi}{2} + k\pi < x < -\frac{\pi}{4} + k\pi$
67	$\frac{\tan^2 2x}{\cot 2x} > 0$	$k\pi < x < \frac{\pi}{4} + k\pi$; $-\frac{\pi}{2} + k\pi < x < -\frac{\pi}{4} + k\pi$
68	$\frac{\sqrt{\sin x}}{\lvert\cos(2x)\rvert} > 0$	$\frac{\pi}{4} + 2k\pi < x < \frac{3}{4}\pi + 2k\pi$; $2k\pi < x < \frac{\pi}{4} + 2k\pi$ $\frac{3}{4}\pi + 2k\pi < x < \pi + 2k\pi$
69	$\frac{-\cos^2 x - 3}{2\cos^2 x} > \frac{\cos x}{1 - 2\cos^2 x}$	$\frac{\pi}{4} + k\pi < x < \frac{3}{4}\pi + k\pi$
70	$\frac{\sin^2 x - 2}{\cos x} < 0$	$-\frac{\pi}{2} + 2k\pi < x < \frac{\pi}{2} + 2k\pi$
71	$\frac{1+\lvert 2\sin x\rvert}{1+2\sin x} > 0$	$2k\pi \le x < \frac{7}{6}\pi + 2k\pi \quad \vee$ $\frac{11}{6}\pi + 2k\pi < x < \pi + 2k\pi$
72	$\frac{1-2\lvert\sin x\rvert}{1+\sin x} > 0$	$-\frac{\pi}{6} + 2k\pi < x < \frac{\pi}{6} + 2k\pi \quad \vee$ $\frac{5}{6} + 2k\pi < x < \frac{7}{6}\pi + 2k\pi$
73	$\frac{2+\cos^2 x + \cot^2 x}{\cos x + \sin x} < 1$	$-\pi + 2k\pi < x < -\frac{\pi}{4} + 2k\pi$ $\frac{3}{4}\pi + 2k\pi < x < \pi + 2k\pi$
74	$\frac{2\lvert\sin x\rvert - 1}{2\sin x - 1} > 0 \qquad [0 \le x \le 2\pi]$	$0 \le x < \frac{7}{6}\pi \ \vee \ \frac{11}{6}\pi < x \le 2\pi$ $\wedge \ x \neq \frac{\pi}{6} \ \wedge \ x \neq \frac{5}{6}\pi$
75	$\frac{2\sin x + \sqrt{3}}{\lvert\cos x\rvert} \le 0$	$\frac{4}{3}\pi + 2k\pi < x < \frac{3}{2}\pi + 2k\pi \quad \vee$ $\frac{2}{3}\pi + 2k\pi < x \le \frac{5}{3}\pi + 2k\pi$

Disequazioni goniometriche fratte

76	$\frac{(2\sin x+1)}{1-\sin x}\geq 0$		$x\neq\frac{\pi}{2}+2k\pi$
77	$\frac{1-2\lvert\sin x\rvert}{2\sin x+1}>0$	$[0<x<2\pi]$	$0<x\frac{\pi}{6}\ \vee\ \frac{5}{6}\pi<x<2\pi\wedge\ x\neq\frac{7}{6}\pi\ \wedge\ x\neq\frac{11}{6}\pi$
78	$\frac{\tan x-3}{\sin x}<0$	$[0\leq x\leq 2\pi]$	$0<x<\frac{\pi}{3}\ \vee\ \frac{2}{3}\pi<x<\frac{4}{3}\pi\ \ x\neq\frac{3}{2}\pi$
79	$\frac{2\lvert\sin x\rvert+\sqrt{3}}{\cos x}>0$		$-\frac{\pi}{2}+2k\pi<x<\frac{\pi}{2}+2k\pi$
80	$\frac{1-\lvert 2\sin x\rvert}{1+\sin x}>0$		$-\frac{\pi}{6}+2k\pi<x<\frac{\pi}{6}+2k\pi\ \ \vee$ $\frac{5}{6}\pi+2k\pi<x<\frac{7}{6}+2k\pi$
81	$\frac{1-3\cot^2 x}{2\cos x-1}<0$	$[0<x<2\pi]$	$0<x<\frac{2}{3}\pi\ \vee\ \frac{4}{3}\pi<x<2\pi$ $\wedge\ x\neq\frac{5}{3}\pi\ \ \wedge x\neq\frac{\pi}{3}$
82	$\frac{\sin 5x+\sin 3x}{\sin 4x}>0$		$-\frac{\pi}{2}+2k\pi<x<\frac{\pi}{2}+2k\pi\ \ \wedge$ $x\neq\frac{\pi}{4}+2k\pi\ \ \wedge\ \ x\neq 2k\pi$
83	$\frac{3\tan x+\sqrt{3}}{\cot x+\sqrt{3}}(2\sin x-1)<0$		$2k\pi<x<\frac{\pi}{6}+2k\pi\ \vee$ $\frac{\pi}{2}+2k\pi<x<\frac{5}{6}\pi+2k\pi\ \vee$ $\pi+2k\pi<x<\frac{3}{2}\pi+2k\pi$
84	$\frac{\sin x}{1+\cos x}>2-\cot x$		$2k\pi<x<2k\pi+\frac{\pi}{6}\ \vee$ $\frac{5}{6}+2k\pi<x<\pi+2k\pi$
85	$\frac{4\cos^2 x-1}{\cos x}<0$		$\frac{\pi}{3}+2k\pi<x<\frac{\pi}{2}+2k\pi\ \ \vee$ $\frac{2}{3}\pi+2k\pi<x<\frac{4}{3}\pi+2k\pi\ \ \vee$ $\frac{3}{2}\pi+2k\pi<x<\frac{5}{3}\pi+2k\pi$
86	$\frac{3\sin x-\sqrt{3}\cos x}{2\cos x-1}\leq 0$		$-\frac{\pi}{3}+2k\pi<x\leq\frac{\pi}{6}+2k\pi\ \ \vee$ $\frac{\pi}{3}+2k\pi<x\leq\frac{7}{6}\pi+2k\pi$
87	$\frac{\cos 7x-\cos 3x}{\sin x\cos x}>0$		$\frac{\pi}{5}(1+2k)<x<\frac{2}{5}\pi(1+2k)\ \ \wedge$ $x\neq 2k\pi$
88	$\frac{\sin x}{2\sin x\frac{\pi}{4}+\cos x}>0$		$2k\pi<x<\pi+2k\pi$

Disequazioni goniometriche fratte

89	$\frac{2\sin x - 1}{2\sin x + 1} < 0$	$-\frac{\pi}{6} + k\pi < x < \frac{\pi}{6} + k\pi$
90	$\frac{\sin^2 x + \cos^2 x}{\sin x - \cos x} > 0$	$\frac{\pi}{4} + 2k\pi < x < \frac{5}{4}\pi + 2k\pi$
91	$\frac{\tan x - \tan\frac{\pi}{3}}{1 - 2\cos x} > 0$	$-\frac{\pi}{3} + 2k\pi < x < \frac{\pi}{2} + 2k\pi \quad con \quad x \neq \frac{\pi}{3} + 2k\pi;$ $\frac{4}{3}\pi + 2k\pi < x < \frac{3}{2}\pi + 2k\pi$
92	$\frac{\sin x \cos x}{2\cos^2 x - 1} \geq 0$	$0 \leq x < \frac{\pi}{4} \ \vee \ \frac{\pi}{2} \leq x < \frac{3}{4}\pi \ \vee$ $\pi \leq x < \frac{5}{4}\pi \ \vee \ \frac{3}{2}\pi \leq x < \frac{7}{4}\pi$