

1	$\frac{\sin x}{1 + 2 \cos x} > 0$	$2k\pi < x < \frac{2}{3}\pi + 2k\pi \vee$ $\pi + 2k\pi < x < \frac{4}{3}\pi + 2k\pi$
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	$\frac{2 \sin x + \sqrt{2}}{\cos x} < 0$	$\frac{\pi}{2} + 2k\pi < x < \frac{5}{4}\pi + 2k\pi \vee$ $\frac{3}{2}\pi + 2k\pi < x < \frac{7}{4}\pi + 2k\pi$
4	$\frac{2 \sin x + 1}{2 \cos x + \sqrt{2}} \geq 0$	$2k\pi \leq x < \frac{3}{4}\pi + 2k\pi \vee$ $\frac{7}{6}\pi + 2k\pi < \frac{5}{4}\pi + 2k\pi \vee$ $\frac{11}{6}\pi + 2k\pi \leq x \leq 2\pi + 2k\pi$
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	$\frac{3 \tan x - \sqrt{3}}{2 \sin x - 1} \geq 0$	$2k\pi \leq x < \frac{\pi}{2} + 2k\pi \wedge$ $x \neq \frac{\pi}{6} + 2k\pi \vee$ $\frac{5}{6}\pi + 2k\pi < x \leq \frac{7}{6}\pi + 2k\pi \vee$ $\frac{3}{2}\pi + 2k\pi < x \leq 2\pi + 2k\pi$

7	$\frac{2 \cos x + \sqrt{3}}{\tan x - 1} < 0$	$2k\pi \leq x < \frac{\pi}{4} + 2k\pi \vee$ $\frac{\pi}{2} + 2k\pi < x < \frac{5}{6}\pi + 2k\pi \vee$ $\frac{7}{6}\pi + 2k\pi < x < \frac{5}{4}\pi + 2k\pi$ $\frac{3}{2}\pi + 2k\pi < x \leq 2\pi + 2k\pi$
8	$\frac{\sin x}{1 - 2 \sin x} > 0$	$2k\pi < x < \frac{\pi}{6} + 2k\pi \vee$ $\frac{5}{6}\pi + 2k\pi < x < \pi + 2k\pi$
9	$\frac{2 \sin x + 1}{\cos x} \geq 0$	$-\frac{\pi}{6} + 2k\pi \leq x < \frac{\pi}{2} + 2k\pi \vee$ $\frac{7}{6}\pi + 2k\pi \leq x < \frac{3}{2}\pi + 2k\pi$
10	$\frac{\tan x - 1}{\tan x} < 0$	$k\pi < x < \frac{\pi}{4} + k\pi$
11	$\frac{\sin x}{\cos x + 1} \geq 0$	$2k\pi < x < \pi + 2k\pi$

12	$\frac{1 - 2 \cos x}{\tan x} \leq 0$	$2k\pi < x \leq \frac{\pi}{3} + 2k\pi \vee$ $\frac{\pi}{2} + 2k\pi < x < \pi + 2k\pi \vee$ $\frac{3}{2}\pi + 2k\pi < x \leq \frac{5}{3}\pi + 2k\pi$
13	$\frac{2 \sin x - \sqrt{3}}{2 \cos x + 1} > 0$	$\frac{\pi}{3} + 2k\pi \leq x \leq \frac{4}{3}\pi + 2k\pi \wedge$ $x \neq \frac{2}{3}\pi + 2k\pi$
14	$\frac{2 \sin x - 1}{\sin x} > 0$	$\frac{\pi}{6} + 2k\pi < x < \frac{5}{6}\pi + 2k\pi \vee$ $\pi + 2k\pi < x < 2\pi + 2k\pi$
15	$\frac{2 \cos x - 3}{\sin x} \geq 0$	$\pi + 2k\pi < x < 2\pi + 2k\pi$
16	$\frac{2 \sin x + \sqrt{2}}{\tan x - \sqrt{3}} \leq 0$	$-\frac{\pi}{4} + 2k\pi \leq x < \frac{\pi}{3} + 2k\pi \vee$ $\frac{\pi}{2} + 2k\pi < x \leq \frac{5}{4}\pi + 2k\pi \vee$ $\frac{4}{3}\pi + 2k\pi < x < \frac{3}{2}\pi + 2k\pi$

17	$\frac{\sin x}{1 - 2\sin x} > 0$	$2k\pi < x < \frac{\pi}{6} + 2k\pi \vee$ $\frac{5}{6}\pi + 2k\pi < x < \pi + 2k\pi$
18	$\frac{2\sin x - \sqrt{3}}{\sin x + 1} > 0$	$\frac{\pi}{3} + 2k\pi < x < \frac{2}{3}\pi + 2k\pi$
19	$\frac{\sqrt{2} - 2\cos x}{2\sin x - \sqrt{2}} < 0$	$\frac{3}{4}\pi + k\pi < x < \frac{7}{4}\pi + 2k\pi$
20	$\frac{1 - \sin x}{1 - 2\cos 2x} \geq 0$	$\frac{\pi}{6} + k\pi < x < \frac{5}{6}\pi + k\pi$
21	$\frac{\sqrt{3} - \cot x}{3\cot x - \sqrt{3}} \geq 0$	$\frac{\pi}{6} + k\pi \leq x < \frac{\pi}{3} + k\pi$
22	$\frac{2\sin x + 1}{1 - \sin x} \geq 0$	$x \neq \frac{\pi}{2} + 2k\pi$

23	$\frac{\sqrt{3} \tan x - 1}{2 \sin x - \sqrt{3}} < 0$	$\frac{\pi}{6} + 2k\pi < x < \frac{\pi}{3} + 2k\pi \vee$ $\frac{\pi}{2} + 2k\pi < x < \frac{2}{3}\pi + 2k\pi \vee$ $\frac{7}{6}\pi + 2k\pi < x < \frac{3}{2}\pi + 2k\pi$
24	$\frac{2 \sin x - 1}{2 \sin x + 1} < 0$	$-\frac{\pi}{6} + k\pi < x < \frac{\pi}{6} + k\pi$
25	$1 - \frac{1}{\tan x} > 0$	$\frac{\pi}{4} + k\pi < x < \frac{\pi}{2} + k\pi \vee$ $\frac{\pi}{2} + k\pi < x < \pi + k\pi$
26	$\frac{\sin x}{\sin x + 1} > 1$	<i>impossibile</i>
27	$\frac{\tan x - \tan \frac{\pi}{3}}{1 - 2 \cos x} > 0$	$-\frac{\pi}{3} + 2k\pi < x < \frac{\pi}{2} + 2k\pi \vee$ $\frac{4}{3}\pi + 2k\pi < x < \frac{3}{2}\pi + 2k\pi \wedge$ $x \neq \frac{\pi}{3} + 2k\pi$
28	$\frac{1}{1 - \sin x} > 2$	$\frac{\pi}{6} + 2k\pi < x < \frac{5}{6}\pi + 2k\pi \wedge$ $x \neq \frac{\pi}{2} + 2k\pi$
29	$\frac{\sin x}{1 + \sin x} > 2$	\emptyset

30	$\frac{\sin x + \sqrt{3}}{\sin x} \geq 3$	$2k\pi < x \leq \frac{\pi}{3} + 2k\pi \vee$ $\frac{2}{3}\pi + 2k\pi \leq x < \pi + 2k\pi$
31	$\frac{\tan x - 3}{\sin x} < 0 \quad [0 \leq x \leq 2\pi]$	$0 < x < \frac{\pi}{3} \vee$ $\frac{2}{3}\pi < x < \frac{4}{3}\pi \wedge$ $x \neq \frac{3}{2}\pi$
32	$\frac{1 + \sqrt{2} \cos(x + \frac{\pi}{6})}{\sin x} \leq 0$	$\frac{7}{12}\pi + 2k\pi \leq x < \pi + 2k\pi \vee$ $\frac{13}{12}\pi + 2k\pi \leq x < 2\pi + 2k\pi$
33	$\frac{\sin(x + \frac{\pi}{4})}{\sqrt{3} - 2 \cos x} > 0$	$\frac{\pi}{6} + 2k\pi < x < \frac{3}{4}\pi + 2k\pi \vee$ $\frac{7}{4}\pi + 2k\pi < x < \frac{11}{6}\pi + 2k\pi$
34	$\frac{2 \cos(x - \frac{\pi}{3}) + \sqrt{3}}{2 \cos x - 1} < 0$	$\frac{\pi}{3} + 2k\pi < x < \frac{7}{6}\pi + 2k\pi \vee$ $\frac{3}{2}\pi + 2k\pi < x < \frac{5}{3}\pi + 2k\pi$
35	$\frac{1 - \sin(x - \frac{\pi}{4})}{\cos x + 1} \geq 0$	$x \neq \pi + 2k\pi$
36	$\frac{1 - \cos x}{\sin x \cos x} \geq 0$	$k\pi < x < \frac{\pi}{2} + k\pi$

37	$\frac{\sin x + \cos x}{\tan x - 1} \geq 0$	$\frac{\pi}{4} + 2k\pi < x < \frac{\pi}{2} + 2k\pi \vee$ $\frac{3}{4}\pi + 2k\pi \leq x < \frac{5}{4}\pi + 2k\pi \vee$ $\frac{3}{2}\pi + 2k\pi < x \leq \frac{7}{4}\pi + 2k\pi$
38	$\frac{2 \sin x - \sin x \cos x}{\tan x} \leq 1$	$x \neq k\pi$
39	$\frac{\cos x + \frac{\sqrt{3}}{2}}{\sin x \cos x + \sin x} \geq 0$	$2k\pi < x \leq \frac{5}{6}\pi + 2k\pi \vee$ $\pi + 2k\pi < x \leq \frac{7}{6}\pi + 2k\pi$
40	$\frac{\cos\left(\frac{\pi}{4} - x\right)}{4 \tan x - (1 - 3 \tan x)} < 0$	$-\frac{\pi}{4} + 2k\pi \leq x < \frac{\pi}{4} + 2k\pi \vee$ $\frac{\pi}{2} + 2k\pi < x < \frac{3}{4}\pi + 2k\pi \vee$ $\frac{5}{4}\pi + 2k\pi < x < \frac{3}{2}\pi + 2k\pi$
41	$\frac{4 \cot^2 x - 3(1 + \cot^2 x)}{2 \cos^2 x - 1} \geq 0$	$-\frac{\pi}{6} + k\pi \leq x \leq \frac{\pi}{6} + k\pi \wedge$ $x \neq \pi + k\pi \vee$ $\frac{\pi}{4} + k\pi < x < \frac{3}{4}\pi + k\pi$
42	$\frac{(\cos x + 1)(2 \sin x + 1)}{\cos x - \frac{\sqrt{3}}{3} \sin x} < 0$	$\frac{\pi}{3} + 2k\pi < x < \frac{7}{6}\pi + 2k\pi \vee$ $\frac{4}{3}\pi + 2k\pi < x < \frac{11}{6}\pi + 2k\pi \wedge$ $x \neq \pi + 2k\pi$
43	$\frac{1 - \cos x}{\cos 2x} \geq 0$	$-\frac{\pi}{4} + k\pi < x < \frac{\pi}{4} + k\pi$

44	$\frac{\cot x}{1 - \tan^2 x} < 0$	$\frac{\pi}{4} + k\pi < x < \frac{\pi}{2} + k\pi \vee$ $\frac{3}{4}\pi + k\pi < x < \pi + k\pi$
45	$\frac{\sin^2 x + \cos^2 x}{\sin x - \cos x} > 0$	$\frac{\pi}{4} + 2k\pi < x < \frac{5}{4}\pi + 2k\pi$
46	$\frac{4 \cos^2 x - 1}{\cos x} < 0$	$\frac{\pi}{3} + 2k\pi < x < \frac{\pi}{2} + 2k\pi \vee$ $\frac{2}{3}\pi + 2k\pi < x < \frac{4}{3}\pi + 2k\pi \vee$ $\frac{3}{2}\pi + 2k\pi < x < \frac{5}{3}\pi + 2k\pi$
47	$\frac{\sin x + 1}{\tan^2 x} \geq -1$	$\forall x \in \mathbb{R}$
48	$\frac{4 \sin x}{3 - 4 \sin^2 x} \geq 0$	$\frac{\pi}{3} + 2k\pi < x < \frac{2}{3}\pi + 2k\pi \vee$ $\pi + 2k\pi \leq x < \frac{4}{3}\pi + 2k\pi \vee$ $\frac{5}{3}\pi + 2k\pi < x \leq 2\pi + 2k\pi$
49	$\frac{\sin x (2 \sin x - 1)}{2 \cos^2 x} \geq 0$	$\frac{\pi}{6} + 2k\pi \leq x \leq \frac{5}{6}\pi + 2k\pi \wedge$ $x \neq \frac{\pi}{2} + 2k\pi \vee$ $\pi + 2k\pi \leq x \leq 2\pi + 2k\pi \wedge$ $x \neq \frac{3}{2}\pi + 2k\pi$

50	$\frac{\sin 2x}{\sin x (2 \sin x - \sqrt{2})} \leq 0$	$2k\pi < x < \frac{\pi}{4} + 2k\pi \vee$ $\frac{\pi}{2} + 2k\pi \leq x < \frac{3}{4}\pi + 2k\pi \vee$ $\frac{3}{2}\pi + 2k\pi \leq x < 2\pi + 2k\pi$
51	$\frac{\sin x \cos x}{2 \cos^2 x - 1} \geq 0$	$k\pi \leq x < \frac{\pi}{4} + k\pi \vee$ $\frac{\pi}{2} + k\pi \leq x < \frac{3}{4}\pi + k\pi \vee$ $\pi + k\pi \leq x < \frac{5}{4}\pi + k\pi \vee$ $\frac{3}{2}\pi + k\pi \leq x < \frac{7}{4}\pi + k\pi$
52	$\frac{\sin x - 2 \sin^2 x}{2 \sin x - 1} \leq 0$	$2k\pi \leq x \leq \pi + 2k\pi \wedge$ $x \neq \frac{\pi}{6} + 2k\pi \wedge$ $x \neq \frac{5}{6}\pi + 2k\pi$
53	$\frac{\cos^2 x - \sin^2 x}{\cos x \cos 3x} < 0$	$\frac{\pi}{6} + k\pi < x < \frac{\pi}{4} + k\pi \vee$ $\frac{3}{4}\pi + k\pi < x < \frac{5}{6}\pi + k\pi$
54	$\frac{2 \cos^2 x - \cos x}{\sin x} > 0$	$2k\pi < x < \frac{\pi}{3} + 2k\pi \vee$ $\frac{\pi}{2} + 2k\pi < x < \pi + 2k\pi \vee$ $\frac{3}{2}\pi + 2k\pi < x < \frac{5}{3}\pi + 2k\pi$
55	$\frac{\cos x - \frac{1}{2}}{2 \sin^2 x - 1} \leq 0$	$-\frac{\pi}{4} + 2k\pi < x < \frac{\pi}{4} + 2k\pi \vee$ $\frac{\pi}{3} + 2k\pi \leq x < \frac{3}{4}\pi + 2k\pi \vee$ $\frac{5}{4}\pi + 2k\pi < x \leq \frac{5}{3}\pi + 2k\pi$

56	$\frac{\tan^2 x - \tan x}{4 \sin^2 x - 1} > 0$	$2k\pi < x < \frac{\pi}{6} + 2k\pi \vee$ $\frac{\pi}{4} + 2k\pi < x < \frac{5}{6}\pi + 2k\pi \vee$ $\frac{5}{4}\pi + 2k\pi < x < \frac{17}{6}\pi + 2k\pi$
57	$\frac{\sin x - \cos x}{\sin x + \cos x} < 0$	$2k\pi < x < \frac{\pi}{4} + 2k\pi \vee$ $\frac{3}{4}\pi + 2k\pi < x < \frac{5}{4}\pi + 2k\pi \vee$ $\frac{7}{4}\pi < x < 2(k+1)\pi$
58	$\frac{3 - 4 \cos^2 x}{2 \sin 2x - \sqrt{2}} < 0$	$\frac{\pi}{8} + k\pi < x < \frac{\pi}{6} + k\pi \vee$ $\frac{3}{8}\pi + k\pi < x < \frac{5}{6}\pi + k\pi$
59	$\frac{1 - 3 \cot^2 x}{2 \cos x - 1} < 0 \quad [0 < x < 2\pi]$	$0 < x < \frac{2}{3}\pi \vee$ $\frac{4}{3}\pi < x < 2\pi \wedge$ $x \neq \frac{5}{3}\pi \wedge x \neq \frac{\pi}{3}$
60	$\frac{4 \cos^2 x - 3}{2 \sin x - 1} > 0$	$\frac{7}{6}\pi + 2k\pi < x < \frac{11}{6}\pi + 2k\pi$
61	$\frac{4 \sin^2 x - 1}{2 \cos x} \geq 0$	$\frac{\pi}{6} + 2k\pi < x < \frac{\pi}{2} + 2k\pi \vee$ $\frac{5}{6}\pi + 2k\pi \leq x < \frac{7}{6}\pi + 2k\pi \vee$ $\frac{3}{2}\pi + 2k\pi < x \leq \frac{11}{6}\pi + 2k\pi$
62	$\frac{2 \sin x \cos x + \sin x}{\sin x + \cos x} \leq 0$	$\frac{2}{3}\pi + 2k\pi \leq x < \frac{3}{4}\pi + 2k\pi \vee$ $\pi + 2k\pi \leq x \leq \frac{4}{3}\pi + 2k\pi \vee$ $\frac{7}{4}\pi + 2k\pi < x \leq 2\pi + 2k\pi$

63	$\frac{\sqrt{3} \sin x + \cos x}{\cos^2 x - \cos x} \leq 0$	$2k\pi < x < \frac{\pi}{2} + 2k\pi \vee$ $\frac{5}{6}\pi + 2k\pi \leq x < \frac{3}{2}\pi + 2k\pi \vee$ $\frac{11}{6}\pi + 2k\pi \leq x < 2\pi + 2k\pi$
64	$\frac{\sin^2 x + 2 \cos x - 2}{3 - \cos^2 x - \sin x} \geq 0$	$x = 2k\pi$
65	$\frac{4 \sin^2 x - 11 \sin x + 3 + 2(1 - \sin^2 x)}{\cos x} \geq 0$	$-\frac{\pi}{2} + 2k\pi < x \leq \frac{\pi}{6} + 2k\pi \vee$ $\frac{\pi}{2} + 2k\pi < x \leq \frac{5}{6}\pi + 2k\pi$
66	$\frac{\sqrt{2} \tan x}{1 - \sin^3 x} > 0$	$k\pi < x < \frac{\pi}{2} + k\pi$
67	$\frac{3 \sin x - \sqrt{3} \cos x}{2 \cos x - 1} \leq 0$	$-\frac{\pi}{3} + 2k\pi < x \leq \frac{\pi}{6} + 2k\pi \vee$ $\frac{\pi}{3} + 2k\pi < x \leq \frac{7}{6}\pi + 2k\pi$
68	$\frac{\sin^2 x - 2}{\cos x} < 0$	$-\frac{\pi}{2} + 2k\pi < x < \frac{\pi}{2} + 2k\pi$
69	$\frac{\sin x + \cos x}{\tan x - \cot x} > 0$	$\frac{\pi}{4} + 2k\pi < x < \frac{\pi}{2} + 2k\pi \vee$ $\pi + 2k\pi < x < \frac{5}{4}\pi + 2k\pi \vee$ $\frac{3}{2}\pi + 2k\pi < x < 2\pi + 2k\pi$

70	$\frac{\sin x}{2 \sin \frac{\pi}{4} + \cos x} > 0$	$2k\pi < x < \pi + 2k\pi$
71	$\frac{3 \tan x + \sqrt{3}}{\cot x + \sqrt{3}} (2 \sin x - 1) < 0$	$2k\pi < x < \frac{\pi}{6} + 2k\pi \vee$ $\frac{\pi}{2} + 2k\pi < x < \frac{5}{6}\pi + 2k\pi \vee$ $\pi + 2k\pi < x < \frac{3}{2}\pi + 2k\pi$
72	$\frac{2 \sin^2 x + 1}{\cos 2x} < 0$	$\frac{\pi}{4} + k\pi < x < \frac{3}{4}\pi + k\pi$
73	$\frac{\cos 2x + \cos x - 1}{\cos 2x} > 2$	$-\frac{3}{4}\pi + 2k\pi < x < -\frac{\pi}{2} + 2k\pi \vee$ $-\frac{\pi}{3} + 2k\pi < x < -\frac{\pi}{4} + 2k\pi \vee$ $\frac{\pi}{4} < x < \frac{\pi}{3} + 2k\pi \vee$ $\frac{\pi}{2} + 2k\pi < x < \frac{3}{4}\pi + 2k\pi$
74	$\frac{\sin 2x (3 - 4 \sin^2 x)}{\sin x} \geq 0$	$2k\pi < x \leq \frac{\pi}{3} + 2k\pi \vee$ $\frac{\pi}{2} + 2k\pi \leq x \leq \frac{2}{3}\pi + 2k\pi \vee$ $\frac{4}{3}\pi + 2k\pi \leq x \leq \frac{3}{2}\pi + 2k\pi \vee$ $\frac{5}{3}\pi + 2k\pi \leq x < 2\pi + 2k\pi$
75	$\frac{2 \cos \frac{x}{2} - 1}{1 + \sin x} > 0$	$-\frac{2}{3}\pi + 4k\pi < x < \frac{2}{3}\pi + 4k\pi \wedge$ $x \neq \frac{3}{2}\pi + 4k\pi$

$$76 \quad \frac{\sqrt{3} \cot x}{\cos(2x)} > 0$$

$$k\pi < x < \frac{\pi}{4} + k\pi \vee \\ -\frac{\pi}{2} + k\pi < x < -\frac{\pi}{4} + k\pi$$

$$77 \quad \frac{\tan^2 2x}{\cot 2x} > 0$$

$$k\pi < x < \frac{\pi}{4} + k\pi \vee \\ -\frac{\pi}{2} + k\pi < x < -\frac{\pi}{4} + k\pi$$

diseguazioni più impegnative

$$78 \quad \frac{1 + \sin^2 \left(x + \frac{\pi}{3}\right)}{1 - \cot^2 \left(\frac{\pi}{6} - x\right)} > 0$$

$$-\frac{7}{12}\pi + k\pi < x < -\frac{\pi}{12} + k\pi$$

$$79 \quad \frac{\sin x (2 \sin x + 1)}{\frac{\cos^2 x - \sin^2 x}{\cos^2 x}} \geq 0$$

$$2k\pi \leq x < \frac{\pi}{4} + 2k\pi \vee \\ \frac{3}{4}\pi + 2k\pi < x \leq \pi + 2k\pi \vee \\ \frac{7}{6}\pi + 2k\pi \leq x < \frac{5}{4}\pi + 2k\pi \vee \\ \frac{7}{4}\pi + 2k\pi < x \leq \frac{11}{6}\pi + 2k\pi \vee \\ \frac{\pi}{2} + k\pi$$

$$80 \quad \frac{\cos x}{1 + \cos x} > \tan^2 \frac{x}{2}$$

$$-\frac{\pi}{3} + 2k\pi < x < \frac{\pi}{3} + 2k\pi$$

$$81 \quad \frac{\sin\left(\frac{\pi}{2} - x\right)}{1 + \cos\left(\frac{\pi}{2} - x\right)} > 2 - \cot\left(\frac{\pi}{2} - x\right)$$

$$\frac{\pi}{3} + 2k\pi < x < \frac{\pi}{2} + 2k\pi \vee$$

$$\frac{3}{2}\pi + 2k\pi < x < \frac{5}{3}\pi + 2k\pi$$

$$82 \quad \frac{\sqrt{3} \sin x + \cos x (\cos x - 1)}{\cos^2 x} \leq 1$$

$$-\frac{5}{6}\pi + 2k\pi \leq x \leq \frac{\pi}{6} + 2k\pi \wedge$$

$$x \neq \frac{3}{2}\pi + 2k\pi$$

$$83 \quad \frac{\sin 2x - \tan x}{\cos^2 x + 3 \sin^2 x} \leq 0$$

$$\frac{\pi}{4} + k\frac{\pi}{2} \leq x < \frac{\pi}{2} + k\frac{\pi}{2}$$

$$84 \quad \frac{1 - \sin x - 2 \cos x}{\cos x} > -\tan x$$

$$\frac{\pi}{3} + 2k\pi < x < \frac{\pi}{2} + 2k\pi \vee$$

$$\frac{3}{2}\pi + 2k\pi < x < \frac{5}{3}\pi + 2k\pi$$

$$85 \quad \frac{4 \cos^2 \frac{x}{2} - 2 \sin^2 \frac{x}{2} - \cos x - 2}{1 - \sin^2 x} \geq 0$$

$$2k\pi \leq x \leq \frac{\pi}{3} + 2k\pi \vee$$

$$\frac{5}{3}\pi + 2k\pi \leq x \leq 2\pi + 2k\pi$$

$$86 \quad \frac{|\sin x|}{6 \cos x + 3 - 4(\cos x + 1)} \geq 0$$

$$-\frac{\pi}{3} + 2k\pi < x < \frac{\pi}{3} + 2k\pi$$

87	$\frac{ \cos x + 1}{4 \sin x - 2\sqrt{3}} < 0$	$2k\pi \leq x < \frac{\pi}{3} + 2k\pi \vee$ $\frac{2}{3}\pi + 2k\pi < x \leq 2\pi + 2k\pi$ $x \neq \pi + 2k\pi$
88	$\frac{2 \sin^2 x - 1}{ \cos x } > \tan x$	$\frac{\pi}{2} + 2k\pi < x < \frac{5}{6}\pi + 2k\pi \vee$ $\frac{3}{2}\pi + 2k\pi < x < \frac{11}{6}\pi + 2k\pi$
89	$\left \frac{\cos 2x}{\sin x} \right < 1 \quad x \in [0, 2\pi]$	$\frac{\pi}{6} < x < \frac{\pi}{2} \vee \frac{\pi}{2} < x < \frac{5}{6}\pi \vee$ $\frac{7}{6}\pi < x < \frac{3}{2}\pi \vee \frac{3}{2}\pi < x < \frac{11}{6}\pi$
90	$\frac{\cos x}{\sqrt{2\cos x - 1}} > \frac{1}{\sqrt{2}}$	$-\frac{\pi}{3} + 2k\pi < x < \frac{\pi}{3} + 2k\pi$
91	$\tan \frac{1}{x^2 + 1} \geq 1$	$-\sqrt{\frac{4 - \pi}{\pi}} \leq x \leq \sqrt{\frac{4 - \pi}{\pi}}$
92	$\frac{2 \tan \frac{x}{2} + \frac{\sin x}{1 + \cos x} - \sqrt{3}}{1 - \sin x} > 0$	$\frac{\pi}{3} + 2k\pi < x < \pi + 2k\pi \wedge$ $x \neq \frac{\pi}{2} + 2k\pi$

$$93 \quad \frac{4 \tan x - \frac{1}{\cos^2 x}}{|16x^2 - 24\pi x + 5\pi^2|} > 0$$

$$\frac{\pi}{12} + k\pi < x < \frac{5}{12}\pi + k\pi \wedge \\ x \neq \frac{\pi}{4} \wedge x \neq \frac{5}{4}\pi$$

$$94 \quad \left| \frac{\tan 2x}{\cot x} \right| < 1$$

$$-\frac{\pi}{6} + k\pi < x < \frac{\pi}{6} + k\pi \wedge \\ x \neq k\pi$$

$$95 \quad \frac{\cos 2\sqrt{x} - \sin \sqrt{x}}{\sin 2\sqrt{x} - \sin \sqrt{x}} \leq 0 \quad x \in [0, 4\pi^2]$$

$$\frac{\pi^2}{36} < x < \frac{\pi^2}{9} \vee \\ \frac{25}{36}\pi \leq x \leq \pi^2 \vee \\ \frac{25}{9}\pi^2 \leq x \leq 4\pi^2$$

$$96 \quad \frac{4 \sin^2 x - 3}{\sin x} > 2 \frac{\cos x}{|\sin x|}$$

$$\frac{2}{5}\pi + 2k\pi < x < \frac{4}{5}\pi + 2k\pi \vee \\ -\pi + 2k\pi < x < -\frac{3}{5}\pi + 2k\pi \vee \\ -\frac{1}{5}\pi + 2k\pi < x < 2k\pi$$

$$97 \quad \frac{1 - \sin x}{1 - 2\sin x} < \frac{1 + \sin x}{1 - 4\sin^2 x}$$

$$2k\pi < x < \frac{\pi}{6} + 2k\pi \vee \\ \frac{5}{6}\pi + 2k\pi < x < \pi + 2k\pi \vee \\ \pi + 2k\pi < x < \frac{7}{6}\pi + 2k\pi \vee \\ \frac{11}{6}\pi + 2k\pi < x < 2\pi + 2k\pi$$

$$98 \quad \frac{1 + |\sin x|}{\tan x} < 0$$

$$-\frac{\pi}{2} + k\pi < x < k\pi$$

99	$\frac{\sqrt{\sin x}}{ \cos(2x) } > 0$	$\frac{\pi}{4} + 2k\pi < x < \frac{3}{4}\pi + 2k\pi \vee$ $2k\pi < x < \frac{\pi}{4} + 2k\pi \vee$ $\frac{3}{4}\pi + 2k\pi < x < \pi + 2k\pi$
100	$\frac{-\cos^2 x - 3}{2 \cos^2 x} > \frac{\cos x}{1 - 2 \cos^2 x}$	$\frac{\pi}{4} + k\pi < x < \frac{3}{4}\pi + k\pi$
101	$\frac{1 + 2 \sin x }{1 + 2 \sin x} > 0$	$2k\pi \leq x < \frac{7}{6}\pi + 2k\pi \vee$ $\frac{11}{6}\pi + 2k\pi < x < \pi + 2k\pi$
102	$\frac{1 - 2 \sin x }{1 + \sin x} > 0$	$-\frac{\pi}{6} + 2k\pi < x < \frac{\pi}{6} + 2k\pi \vee$ $\frac{5}{6} + 2k\pi < x < \frac{7}{6}\pi + 2k\pi$
103	$\frac{2 + \cos^2 x + \cot^2 x}{\cos x + \sin x} < 1$	$-\pi + 2k\pi < x < -\frac{\pi}{4} + 2k\pi \vee$ $\frac{3}{4}\pi + 2k\pi < x < \pi + 2k\pi$
104	$\frac{2 \sin x - 1}{2 \sin x - 1} > 0 \quad [0 \leq x \leq 2\pi]$	$0 \leq x < \frac{7}{6}\pi \vee$ $\frac{11}{6}\pi < x \leq 2\pi \wedge$ $x \neq \frac{\pi}{6} \wedge x \neq \frac{5}{6}\pi$
105	$\frac{2 \sin x + \sqrt{3}}{ \cos x } \leq 0$	$\frac{4}{3}\pi + 2k\pi \leq x < \frac{3}{2}\pi + 2k\pi \vee$ $\frac{2}{3}\pi + 2k\pi < x \leq \frac{5}{3}\pi + 2k\pi$

106	$\frac{1 - 2 \sin x }{2 \sin x + 1} > 0 \quad [0 < x < 2\pi]$	$0 < x < \frac{\pi}{6} \vee$ $\frac{5}{6}\pi < x < 2\pi \wedge$ $x \neq \frac{7}{6}\pi \wedge x \neq \frac{11}{6}\pi$
107	$\frac{2 \sin x + \sqrt{3}}{\cos x} > 0$	$-\frac{\pi}{2} + 2k\pi < x < \frac{\pi}{2} + 2k\pi$
108	$\frac{1 - 2 \sin x }{1 + \sin x} > 0$	$-\frac{\pi}{6} + 2k\pi < x < \frac{\pi}{6} + 2k\pi \vee$ $\frac{5}{6}\pi + 2k\pi < x < \frac{7}{6} + 2k\pi$
109	$\frac{\sin 5x + \sin 3x}{\sin 4x} > 0$	$-\frac{\pi}{2} + 2k\pi < x < \frac{\pi}{2} + 2k\pi \wedge$ $x \neq \frac{\pi}{4} + 2k\pi \wedge x \neq 2k\pi$
110	$\frac{\sin x}{1 + \cos x} > 2 - \cot x$	$2k\pi < x < 2k\pi + \frac{\pi}{6} \vee$ $\frac{5}{6} + 2k\pi < x < \pi + 2k\pi$
111	$\frac{\cos 7x - \cos 3x}{\sin x \cos x} > 0$	$\frac{\pi}{5} + \frac{2}{5}k\pi < x < \frac{2}{5}\pi + \frac{4}{5}k\pi \wedge$ $x \neq 2k\pi$
112	$\frac{\frac{\sin x}{\cos x} + \sqrt{3}}{2\cos^2 x - 1} \leq 0$	$\frac{\pi}{4} + k\pi < x < \frac{\pi}{2} + k\pi \vee$ $\frac{2}{3}\pi + k\pi < x < \frac{3}{4}\pi + k\pi$

113	$\frac{1}{\cot x} + \frac{1}{\tan x} < \frac{4}{3}$	$\frac{\pi}{2} + k\pi < x < \pi + k\pi$
114	$\frac{\sin 6x - \sin 2x}{(\cos 2x + \sin 2x)(\cos 2x - \sin 2x)} \geq 0$	$k\pi \leq x \leq \frac{\pi}{2} + k\pi \wedge$ $x \neq \frac{\pi}{8} + k\frac{\pi}{4}$
115	$\frac{2 \sin x \cos^2 x}{\cos 3x + \cos x} \geq 0$	$k\frac{\pi}{2} \leq x < \frac{\pi}{4} + k\frac{\pi}{2} \wedge$ $x \neq \frac{\pi}{2} + k\pi$