Sistemi di disequazioni goniometriche

1	$\begin{cases} \cos x \leq -\dfrac{1}{2} \\ \sin x \leq 0 \end{cases}$	$\pi + 2k\pi \leq x \leq \dfrac{4}{3}\pi + 2k\pi$
2	$\begin{cases} \cos x > 0 \\ \sin x > -\dfrac{\sqrt{2}}{2} \end{cases}$	$2k\pi \leq x < \dfrac{\pi}{2} + 2k\pi \ \vee$ $\dfrac{7}{4}\pi + 2k\pi < x \leq 2\pi + 2k\pi$
3	$\begin{cases} \tan x < -\sqrt{3} \\ \tan x > \dfrac{1}{\sqrt{3}} \end{cases}$	$\emptyset$
4	$\begin{cases} \cos x < 1 \\ \sin x \leq \dfrac{1}{2} \end{cases}$	$2k\pi < x \leq \dfrac{\pi}{6} + 2k\pi \ \vee$ $\dfrac{5}{6}\pi + 2k\pi \leq x < 2\pi + 2k\pi$
5	$\begin{cases} \cos x \geq \dfrac{\sqrt{3}}{2} \\ \sin x \leq 0 \end{cases}$	$x = 2k\pi \ \vee$ $\dfrac{11}{6}\pi + 2k\pi \leq x \leq 2\pi + 2k\pi$
6	$\begin{cases} \tan x \geq -1 \\ \cot x \geq 1 \end{cases}$	$k\pi < x \leq \dfrac{\pi}{4} + k\pi$
7	$\begin{cases} \sin x \geq -\dfrac{\sqrt{3}}{2} \\ \cos x > -\dfrac{1}{2} \end{cases}$	$2k\pi \leq x < \dfrac{2}{3}\pi + 2k\pi \ \vee$ $\dfrac{5}{3}\pi + 2k\pi \leq x \leq 2\pi + 2k\pi$
8	$\begin{cases} 2\sin x > \sqrt{2} \\ 2\cos x < \sqrt{2} \end{cases}$	$\dfrac{\pi}{4} + 2k\pi < x < \dfrac{3}{4}\pi + 2k\pi$
9	$\begin{cases} \dfrac{\sqrt{2}}{2} - \cos x \geq 0 \\ \sin x - \dfrac{1}{2} \geq 0 \end{cases}$	$\dfrac{1}{4}\pi + 2k\pi \leq x \leq \dfrac{5}{6}\pi + 2k\pi$
10	$\begin{cases} 3\tan x > \sqrt{3} \\ 2\sin x + 1 < 0 \end{cases}$	$\dfrac{7}{6}\pi + 2k\pi < x < \dfrac{3}{2}\pi + 2k\pi$
11	$\begin{cases} \tan x \geq \sqrt{3} \\ 2\sin x \geq 1 \end{cases}$	$\dfrac{\pi}{3} + 2k\pi \leq x < \dfrac{\pi}{2} + 2k\pi$
12	$\begin{cases} \tan \dfrac{x}{2} > \sqrt{3} \\ \tan \dfrac{x}{2} < -1 \end{cases}$	$\emptyset$
13	$\begin{cases} \tan x < -\dfrac{1}{\sqrt{3}} \\ \cos 2x \geq 0 \end{cases}$	$\dfrac{3}{4}\pi + k\pi \leq x < \dfrac{5}{6}\pi + k\pi$
14	$\begin{cases} 2\sin\left(x - \dfrac{\pi}{3}\right) \leq -2 \\ \cos\left(x - \dfrac{\pi}{3}\right) \geq -\dfrac{1}{2} \end{cases}$	$x = \dfrac{11}{6}\pi + 2k\pi$
15	$\begin{cases} 2\cos x \geq \sqrt{3} \\ 2\cos 2x - 1 \leq 0 \end{cases}$	$x = \dfrac{\pi}{6} + 2k\pi; \ x = \dfrac{11}{6}\pi + 2k\pi$

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16	$\begin{cases} \sqrt{3} \cot \dfrac{x}{2} \geq 3 \\ \sin x + 3 > 2(\sin x + 2) \end{cases}$	$\emptyset$
17	$\begin{cases} 2 \sin 2x - \sqrt{3} < 0 \\ \sin \left(x - \dfrac{\pi}{3} \right) \geq 0 \end{cases}$	$\dfrac{\pi}{3} + 2k\pi < x < \dfrac{7}{6}\pi + 2k\pi$
18	$\begin{cases} \sin 2x > \cos x \\ \cos 2x + (\cos x - 1)^2 > \cos^2 x \end{cases}$	$\dfrac{5}{6}\pi + 2k\pi < x < \dfrac{3}{2}\pi + 2k\pi$
19	$\begin{cases} 2 \cos^2 \dfrac{x}{2} + \cos x - 2 \leq 0 \\ \sin x + \cos x < 0 \end{cases}$	$\dfrac{3}{4}\pi + 2k\pi < x \leq \dfrac{5}{3}\pi + 2k\pi$
20	$\begin{cases} \tan \dfrac{x}{2} > \sqrt{3} \\ \sin \left(x + \dfrac{\pi}{4} \right) > 0 \end{cases}$	$\dfrac{2}{3}\pi + 2k\pi < x < \dfrac{3}{4}\pi + 2k\pi$
21	$\begin{cases} \sin^2 \dfrac{x}{2} + \cos x - 1 \leq 0 \\ \sin^2 \dfrac{x}{2} + \cos x - 1 \geq 0 \end{cases}$	$x = 2k\pi$
22	$\begin{cases} \cos x + \sqrt{3} \sin x - \sqrt{3} > 0 \\ \sqrt{3} \cos \left(x - \dfrac{\pi}{6} \right) - \sin \left(x - \dfrac{\pi}{6} \right) > 0 \end{cases}$	$\dfrac{\pi}{6} + 2k\pi < x < \dfrac{\pi}{2} + 2k\pi$
23	$\begin{cases} \dfrac{1}{2} - \cos^2 x \leq 0 \\ 3 - \tan^2 x \leq 0 \end{cases}$	$\emptyset$
24	$\begin{cases} \cos x - \dfrac{1}{2} \geq 0 \\ \sin^2 x - \dfrac{1}{2} \leq 0 \end{cases}$	$-\dfrac{\pi}{4} + 2k\pi \leq x \leq \dfrac{\pi}{4} + 2k\pi$
25	$\begin{cases} \left(\sin x - \dfrac{1}{2} \right) \left(\sin x + \dfrac{1}{2} \right) > 0 \\ \dfrac{3}{4} - \cos^2 x > 0 \end{cases}$	$\dfrac{\pi}{6} + k\pi < x < \dfrac{5}{6}\pi + k\pi$
26	$\begin{cases} (\sin x - 1)(\sin x + 1) \leq 0 \\ \sin x (\sin x - 1) \geq 0 \end{cases}$	$x = \dfrac{\pi}{2} + 2k\pi \lor$ $\pi + 2k\pi \leq x \leq 2\pi + 2k\pi$
27	$\begin{cases} 1 + \sin x (2 \sin x - 3) \geq 0 \\ \sin x (2 \sin x - 1) < 0 \end{cases}$	$2k\pi < x < \dfrac{\pi}{6} + 2k\pi \lor$ $\dfrac{5}{6}\pi + 2k\pi < x < \pi + 2k\pi$
28	$\begin{cases} \tan x - \sqrt{3} < 0 \\ \sin x (2 \sin x + 1) - 1 > 0 \end{cases}$	$\dfrac{\pi}{6} + 2k\pi < x < \dfrac{\pi}{3} + 2k\pi \lor$ $\dfrac{\pi}{2} + 2k\pi < x < \dfrac{5}{6}\pi + 2k\pi$
29	$\begin{cases} \cos^2 x - 3 \cos x + 2 < 0 \\ \left(\sin x - \dfrac{\sqrt{2}}{2} \right) \left(\sin x + \dfrac{\sqrt{2}}{2} \right) > 0 \end{cases}$	$\emptyset$

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30	$\begin{cases} 4\sin^2 x - 1 > 0 \\ 2\cos^2 x < \dfrac{3}{2} \end{cases}$	$\dfrac{\pi}{6} + k\pi < x < \dfrac{5}{6}\pi + k\pi$
31	$\begin{cases} 2\sin^2 x - \cos x - 1 > 0 \\ \cos 2x + 3\sin x \geq 2 \end{cases}$	$\dfrac{\pi}{3} + 2k\pi < x \leq \dfrac{5}{6}\pi + 2k\pi$
32	$\begin{cases} 4\sqrt{3}\tan x - 3 - 3\tan^2 x < 0 \\ 6\tan x - 9 + (\tan x - 3)^2 < 0 \end{cases}$	$\emptyset$
33	$\begin{cases} \left(\cot x - \dfrac{1}{\sqrt{3}}\right)\left(\cot x + \dfrac{1}{\sqrt{3}}\right) \geq 0 \\ \dfrac{1}{3} - \tan^2 x \geq 0 \end{cases}$	$-\dfrac{\pi}{6} + k\pi \leq x \leq \dfrac{\pi}{6} + k\pi \ \wedge$ $x \neq k\pi$
34	$\begin{cases} \tan^2 x - \tan x < 0 \\ 1 - \tan^2 x \geq 0 \end{cases}$	$k\pi \leq x < \dfrac{\pi}{4} + k\pi$
35	$\begin{cases} 2\sin x + \sqrt{2} \leq 0 \\ 2\tan x(\cos^{-1} x) < 0 \end{cases}$	$\dfrac{5}{4}\pi + 2k\pi \leq x \leq \dfrac{7}{4}\pi + 2k\pi \ \wedge$ $x \neq \dfrac{3}{2}\pi + 2k\pi$
36	$\begin{cases} 2\cos^2 x + 3\cos x - 2 > 0 \\ 3\cos x + \sin^2 x - 3 > 0 \end{cases}$	$\emptyset$
37	$\begin{cases} \tan x + 1 > 0 \\ \dfrac{\cos x}{\sin x - \dfrac{\sqrt{2}}{2}} \geq 0 \end{cases}$	$\dfrac{\pi}{4} + 2k\pi < x < \dfrac{\pi}{2} + 2k\pi \ \vee$ $\dfrac{3}{4}\pi + 2k\pi < x < \dfrac{3}{2}\pi + 2k\pi$
38	$\begin{cases} (\tan^2 x - 1)(\tan^2 x + 1) \leq 0 \\ \sin x - \cos x \geq 0 \end{cases}$	$x = \dfrac{\pi}{4} + 2k\pi \ \vee$ $\dfrac{3}{4}\pi + 2k\pi \leq x \leq \dfrac{5}{4}\pi + 2k\pi$
39	$\begin{cases} \sin^2 x - 3\sin x + 2 \geq 0 \\ 5(1 - \cos x) - \sin^2 x \leq 0 \end{cases}$	$x = 2k\pi$
40	$\begin{cases} \sin 2x > \sin x \\ \cos 2x \leq \cos x \end{cases}$	$2k\pi < x < \dfrac{\pi}{3} + 2k\pi$ $\dfrac{4\pi}{3} + 2k\pi < x < \dfrac{5\pi}{3} + 2k\pi$
41	$\begin{cases} 2(1 - \sin x)(1 + \sin x) > 2 - 3\cos x \\ \dfrac{\sin x - \cos x}{\cos x \tan x + \cos x} < 0 \end{cases}$	$-\dfrac{\pi}{4} + 2k\pi < x < \dfrac{\pi}{4} + 2k\pi$
42	$\begin{cases} 3\sin^2 x + 2\sqrt{3}\sin x \cos x \leq 3\cos^2 x \\ \sqrt{3}\cos^2 x - \sin^2 x - (\sqrt{3} - 1)\sin x \cos x > 0 \end{cases}$	$-\dfrac{\pi}{3} + k\pi < x \leq \dfrac{\pi}{6} + k\pi$
43	$\begin{cases} |\sin x| < \sqrt{2} + 1 \\ \sin\left(2x - \dfrac{\pi}{4}\right) > \cos\left(2x - \dfrac{\pi}{4}\right) \end{cases}$	$\dfrac{\pi}{4} + k\pi < x < \dfrac{3}{4}\pi + k\pi$
44	$\begin{cases} \sin^2 x - \cos^2 x > 0 \\ \sin^4 x - \cos^4 x < 0 \end{cases}$	$\emptyset$
45	$\begin{cases} \dfrac{\sin 3x + \sin x}{2\sin^2 x \cos x} \geq 0 \\ 2(\cos x + \sin x)(\cos x - \sin x) + 1 \geq 0 \end{cases}$	$k\pi < x \leq \dfrac{\pi}{3} + k\pi$

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46	$\begin{cases} \sin 2x \geq -\sin x \\ \dfrac{1 - \sin x - \sqrt{3} \cos x}{\cos x} \geq 0 \end{cases}$	$\emptyset$
47	$\begin{cases} 2\lvert \sin x \rvert - \sqrt{3} < 0 \\ \cot x \leq \sqrt{3} \end{cases}$	$\dfrac{\pi}{6} + k\pi < x \leq \dfrac{\pi}{3} + k\pi$
48	$\begin{cases} \sqrt{2}\, \sin x > \sin\left(x + \dfrac{\pi}{4}\right) \\ \dfrac{\lvert \sin x \rvert - 1}{\tan \dfrac{x}{2}} > 0 \end{cases}$	$\pi + 2k\pi < x < \dfrac{4\pi}{3} + 2k\pi$
49	$\begin{cases} \lvert \cos x - \sin x \rvert - \sqrt{2} < 0 \\ \dfrac{(\cos x + \sqrt{3})^2 - 2\sqrt{3} \cos x}{\cos 2x + 2} - \dfrac{\cos 2x}{3 - \cos^2 x} - \dfrac{5}{6} \geq 0 \end{cases}$	$x \neq \dfrac{3}{4}\pi + k\pi$
50	$\begin{cases} \dfrac{\sqrt{3}\, \sin x - \cos x + \cos^2 x}{\sin x} \leq 0 \\ -\sqrt{\dfrac{\sin 2x}{\cos^2 x}} \leq 0 \end{cases}$	$\pi + 2k\pi \leq x \leq \dfrac{5\pi}{4} + 2k\pi$
51	$\begin{cases} 2(\sin x)^{\frac{1}{2}} < \sqrt{2} \\ \tan\left(\dfrac{\pi}{4} + x\right) > 2 \sin x \cos x + 1 \end{cases}$	$2k\pi < x < \dfrac{\pi}{6} + 2k\pi$ $2k\pi + \dfrac{5\pi}{6} < x < \pi + 2k\pi$
52	$\begin{cases} \tan 2x < 1 \\ \dfrac{\sin x\,(2 - \cos x)}{\tan x} \leq 1 \end{cases}$	$-\dfrac{\pi}{4} + k\dfrac{\pi}{2} < x < \dfrac{\pi}{8} + k\dfrac{\pi}{2} \wedge$ $x \neq k\dfrac{\pi}{2}$
53	$\begin{cases} \operatorname{cosec} 2x < \dfrac{\sqrt{2}}{2} \\ \cot \dfrac{x}{2}(1 + \cos x) - \sin x < 0 \end{cases}$	$\dfrac{\pi}{2} + k\pi < x < \pi + k\pi$
54	$\begin{cases} \sqrt{5 - 2\sin x} \geq 6\sin x - 1 \\ \sin^3 x + \cos^3 x > 0 \end{cases}$	$2k\pi \leq x \leq \dfrac{\pi}{6} + 2k\pi$
55	$\begin{cases} (\cos x - \sin x) \tan x \geq 0 \\ \left\lvert \dfrac{\cos 2x}{\sin x} \right\rvert \leq 1 \end{cases}$	$\dfrac{\pi}{6} + 2k\pi \leq x \leq \dfrac{\pi}{4} + 2k\pi \vee$ $\dfrac{\pi}{2} + 2k\pi < x \leq \dfrac{5}{6}\pi + 2k\pi \vee$ $\dfrac{5}{4}\pi + 2k\pi \leq x < \dfrac{3}{2}\pi + 2k\pi$
56	$\begin{cases} \sqrt{1 - \cos x} + 1 > 0 \\ \sqrt{3}\, \sin x - \sin 2x > 0 \\ \left\lvert \tan \dfrac{x}{2} \right\rvert < 1 \end{cases}$	$\dfrac{\pi}{6} + 2k\pi < x < \dfrac{\pi}{2} + 2k\pi \vee$ $\dfrac{11}{6}\pi + 2k\pi < x < 2\pi + 2k\pi$
57	$\begin{cases} 2\cos^2 \dfrac{x}{2} < 1 - 2\cos x \\ \sqrt{\sqrt{3} - 2\cos x} \geq 0 \\ \sin^2 x + \dfrac{5}{2}\cos x - 2 > 0 \end{cases}$	$\emptyset$

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58	$\begin{cases} \sin x - \cos x > 0 \\ \tan \dfrac{x}{2} + 2\cos x < 2 \\ \sqrt{3}\sin x - \cos x > 0 \end{cases}$	$\dfrac{\pi}{4} + 2k\pi < x < \dfrac{5}{6}\pi + 2k\pi$
59	$\begin{cases} \tan\left(x + \dfrac{\pi}{4}\right) - 1 > \sin 2x \\ 2\sqrt{\cos\left(\dfrac{3}{2}\pi + x\right)} < \sqrt{2} \\ \sqrt{1 + 2\cos x} > 1 - \cos x \end{cases}$	$2k\pi < x < \dfrac{\pi}{6} + 2k\pi$
60	$\begin{cases} 2\sin^2 \dfrac{x}{2} < 1 - \sin x \\ \left|\dfrac{\tan 2x}{\cot x}\right| < 1 \\ 3\cos x + \sin^2 x - 3 > 0 \end{cases}$	$\varnothing$
61	$\begin{cases} \dfrac{\cos x + \dfrac{1}{\tan x}}{\tan x} \geq -1 \\ -3\sin^2 x(1 - \sec^2 x) \leq \sqrt{3}(2\tan x + 3\cos^2 x) \\ \dfrac{2|\cos x| - 1}{2\tan x} > 0 \end{cases}$	$k\pi < x < \dfrac{\pi}{3} + k\pi$
62	$\begin{cases} \arcsin x < \dfrac{\pi}{4} \\ \arccos x \geq \dfrac{\pi}{3} \end{cases}$	$-1 \leq x \leq \dfrac{1}{2}$
63	$\begin{cases} \arccos x + \pi > 0 \\ 2\arccos x - \pi > 0 \end{cases}$	$-1 \leq x < 0$
64	$\begin{cases} \arcsin x > -\dfrac{\pi}{4} \\ \arccos x \leq \dfrac{\pi}{4} \end{cases}$	$\dfrac{\sqrt{2}}{2} \leq x \leq 1$
65	$\begin{cases} \arccos x + \pi < 0 \\ 2\arccos x - \pi > 0 \end{cases}$	$\varnothing$
66	$\begin{cases} 2\arctan x + \pi \geq 0 \\ 16\arctan^2 x - \pi^2 \geq 0 \end{cases}$	$x \leq -1 \lor x \geq 1$
67	$\begin{cases} |4\arcsin x| < \pi \\ 4\arctan x - \pi \geq 0 \end{cases}$	$\varnothing$
68	$\begin{cases} \tan^3(2x) \geq 1 \\ \sin x \cos x > 0 \end{cases}$	$-\dfrac{7}{8}\pi + \kappa\pi < x < -\dfrac{3}{4}\pi + \kappa\pi$
69	$\begin{cases} 1 + \sin^2\left(x + \dfrac{\pi}{3}\right) > 0 \\ 1 - \cot^2\left(\dfrac{\pi}{6} - x\right) > 0 \end{cases}$	$-\dfrac{7}{2}\pi + \kappa\pi < x < -\dfrac{\pi}{12} + \kappa\pi$
70	$\begin{cases} \sin x + \sqrt{3} > 3\sin x \\ 2\sin x + 2\cos x > 0 \end{cases}$	$-\dfrac{\pi}{4} + 2\kappa\pi < x < \dfrac{\pi}{3} + 2\kappa\pi \lor$ $\dfrac{2}{3}\pi + 2\kappa\pi < x < \dfrac{3}{4}\pi + 2\kappa\pi$
71	$\begin{cases} 2 - 2\cos^2 x < 1 \\ \cos 2x > 0 \end{cases}$	$-\dfrac{\pi}{4} + 2\kappa\pi < x < \dfrac{\pi}{4} + 2\kappa\pi$

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72	$\begin{cases} \sin x > 0 \\ \cos x < \dfrac{\sqrt{3}}{2} \end{cases}$	$\dfrac{\pi}{6} + 2\kappa\pi < x < \pi + 2\kappa\pi$
73	$\begin{cases} 4\sin x - 4 < 0 \\ \cos x + \sin x > 0 \end{cases}$	$-\dfrac{\pi}{4} + 2\kappa\pi < x < \dfrac{\pi}{4} + 2\kappa\pi \vee$ $\dfrac{\pi}{2} + 2\kappa\pi < x < \dfrac{3}{4}\pi + 2\kappa\pi$
74	$\begin{cases} \sin^3 x + \cos^2 x < 1 \\ \tan x > 1 \end{cases}$	$-\dfrac{3}{4} + \kappa\pi < x < -\dfrac{\pi}{2} + \kappa\pi$
75	$\begin{cases} 1 - \cot^2 x < 1 \\ \sin x \tan x > 0 \end{cases}$	$-\dfrac{\pi}{2} + 2\kappa\pi < x < 2\kappa\pi \vee$ $2\kappa\pi < x < \dfrac{\pi}{2} + 2\kappa\pi$
76	$\begin{cases} \sqrt{3}\cos x + |\sin x| < 1 \\ 2 - \sin^2 x > 0 \end{cases}$	$-\pi + 2\kappa\pi < x < -\dfrac{\pi}{2} + 2\kappa\pi$ $x = \pi + 2\kappa\pi$ $\dfrac{\pi}{2} + 2\kappa\pi < x < \pi + 2\kappa\pi$
77	$\begin{cases} \cot^2 x - 3 \le 0 \\ 2\cos^2 x - 1 \le 0 \\ \sin^2 x + 2\sin x + 1 \le 0 \end{cases}$	$x = \dfrac{3}{2}\pi + 2\kappa\pi$
78	$\begin{cases} 2\sin^2 x - \sin x - 1 \le 0 \\ \sqrt{3}\cot^2 x - 3\cot x \le 0 \end{cases}$	$\dfrac{\pi}{6} + 2\kappa\pi \le x \le \dfrac{\pi}{2} + 2\kappa\pi; \; x = \dfrac{7}{6}\pi + 2\kappa\pi$
79	$\begin{cases} \sin^2 x + \sin x \ge 0 \\ 1 - 2\cos^2 x \ge 0 \\ 4\sin^2 x - 3 \ge 0 \end{cases}$	$\dfrac{\pi}{3} + 2\kappa\pi \le x \le \dfrac{2}{3}\pi + 2\kappa\pi; \; x = \dfrac{3}{2}\pi + 2\kappa\pi$
80	$\begin{cases} \sin x - \sqrt{3}\cos x \le 0 \\ \cos x(2\sin x + 1) \ge 0 \end{cases}$	$-\dfrac{\pi}{6} + 2\kappa\pi \le x \le \dfrac{\pi}{3} + 2\kappa\pi \vee$ $\dfrac{4}{3}\pi + 2\kappa\pi < x \le \dfrac{3}{2}\pi + 2\kappa\pi$
81	$\begin{cases} 2\sin^2 x - \sin x \ge 0 \\ 2\cos x - 1 \ge \\ (1 - \sin^2 x) + \cos x \ge 0 \end{cases}$	$\dfrac{\pi}{6} + 2\kappa\pi \le x \le \dfrac{\pi}{3} + 2\kappa\pi \vee$ $\dfrac{5}{3}\pi + 2\kappa\pi \le x \le 2\pi + 2\kappa\pi$
82	$\begin{cases} \tan^2 x - 1 \ge 0 \\ \sqrt{3 + 2\sin x} \ge 0 \end{cases}$	$\dfrac{\pi}{4} + 2\kappa\pi \le x \le \dfrac{3}{4}\pi + 2\kappa\pi; \; x \ne \dfrac{\pi}{2} + 2\kappa\pi;$ $\dfrac{5}{4}\pi + 2\kappa\pi \le x \le \dfrac{4}{3}\pi + 2\kappa\pi$
83	$\begin{cases} 2\cos x - \sqrt{2} \le 0 \\ 1 - 2\sin x \ge 0 \end{cases}$	$\dfrac{5}{6}\pi + 2\kappa\pi \le x \le \dfrac{7}{4}\pi + 2\kappa\pi$