Dominio di funzioni goniometriche

PASSED

Determinare il dominio delle seguenti funzioni goniometriche

1	$y = sinx$	R
2	$y = cosx$	R
3	$y = \tan x$	$x \neq \frac{\pi}{2} + k\pi$
4	$y = \cot x$	$x \neq k\pi$
5	$y = \sec x$	$x \neq \frac{\pi}{2} + k\pi$
6	$y = \csc x$	$x \neq k\pi$
7	$y = \arcsin x$	$-1 \leq x \leq 1$
8	$y = \arccos x$	$-1 \leq x \leq 1$
9	$y = \arctan x$	R
10	$y = \operatorname{arccot} x$	R

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11	$y = sinx + \cos x$	R
12	$y = sinx \cdot \cos x$	R
13	$y = \frac{3\cos x - tan\, x}{sin^2 x}$	$x \neq k\frac{\pi}{2}$
14	$y = \frac{cos\, 2x}{sin\, 2x}$	$x \neq k\frac{\pi}{2}$
15	$y = \frac{\cos x}{1 - \cos x}$	$x \neq 2k\pi$
16	$y = \frac{1 - sin\, x}{\cos x - sin\, x}$	$x \neq \frac{\pi}{4} + k\pi$
17	$y = \frac{2\, sin\, x + 4\cos x}{\sqrt{3}\, sin\, x - \cos x}$	$x \neq \frac{\pi}{6} + k\pi$
18	$y = \frac{5\, sin^4 x}{1 + 2\, sin\, x}$	$x \neq \frac{7}{6}\pi + 2k\pi \ \wedge\ x \neq \frac{11}{6}\pi + 2k\pi$
19	$y = \frac{1}{sinx + cosx}$	$x \neq -\frac{\pi}{4} + k\pi$
20	$y = \frac{1}{2sin^2 x - 1}$	$x \neq \frac{\pi}{4} + k\frac{\pi}{2}$
21	$y = \frac{1}{2cos^2 x - cosx}$	$x \neq \pm\frac{\pi}{3} + 2k\pi \ \wedge\ x \neq \frac{\pi}{2} + k\pi$

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22	$y = \frac{1}{2sin^2x + 5sinx - 3}$	$x \neq \frac{\pi}{6} + 2k\pi \ \wedge \ x \neq \frac{5}{6}\pi + 2k\pi$
23	$y = \frac{x^2}{tan^2x - 3}$	$x \neq \pm\frac{\pi}{3} + k\pi \ \wedge \ x \neq \frac{\pi}{2} + k\pi$
24	$y = \frac{1 - x}{tan^2x + tanx}$	$x \neq k\frac{\pi}{2} \ \wedge \ x \neq -\frac{\pi}{4} + k\pi$
25	$y = \frac{1}{sinx - cosx + 1}$	$x \neq 2k\pi \ \wedge \ x \neq \frac{3}{2}\pi + 2k\pi$
26	$y = \frac{1 + 3sinx}{\sqrt{3}sinx + cosx - \sqrt{3}}$	$x \neq \frac{\pi}{2} + 2k\pi \ \wedge \ x \neq \frac{\pi}{6} + 2k\pi$
27	$y = \frac{1}{\lvert sinx \rvert - \lvert cosx \rvert}$	$x \neq \pm\frac{\pi}{4} + k\pi$
28	$y = \sqrt{1 - 2sinx}$ $x \in [0; 2\pi]$	$0 \leq x \leq \frac{\pi}{6} \vee \frac{5}{6}\pi \leq x \leq 2\pi$
29	$y = \sqrt{2sinx - \sqrt{2}}$ $x \in [0; 2\pi]$	$\frac{\pi}{4} \leq x \leq \frac{3}{4}\pi$
30	$y = \sqrt{tanx} + \sqrt{1 - tanx}$	$k\pi \leq x \leq \frac{\pi}{4} + k\pi$
31	$y = \sqrt{2\lvert sinx \rvert - \sqrt{3}}$	$\frac{\pi}{3} + k\pi \leq x \leq \frac{2}{3}\pi + k\pi$
32	$y = \sqrt{\frac{sinx}{cos + 1}}$	$2k\pi \leq x < \pi + 2k\pi$

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33	$y = \frac{1}{\sqrt{1-2cosx}} + \sqrt{cosx}$ $x \in \left[-\frac{\pi}{2}; \frac{3}{2}\pi\right]$	$-\frac{\pi}{2} \leq x < -\frac{\pi}{3} \vee \frac{\pi}{3} < x \leq \frac{\pi}{2}$
34	$y = \frac{1-2x}{cos^2x - cos^2x}$	$x \neq k\pi \wedge x \neq \frac{\pi}{2} + k\pi$
35	$y = \frac{1}{(cotx - \sqrt{3})(tan^2x - 1)}$	$x \neq \frac{\pi}{6} + k\pi \wedge x \neq \frac{\pi}{4} + k\pi$
36	$y = \sqrt{cosx - sinx - 1}$ $x \in [0; 2\pi)$	$\frac{3}{2}\pi \leq x < 2\pi$
37	$y = \frac{1}{\sqrt{3}\lvert cosx\rvert - sinx}$	$x \neq \pm\frac{\pi}{3} + k\pi$
38	$y = \sqrt{\frac{\lvert sinx\rvert + 1}{cosx}}$	$-\frac{\pi}{2} + 2k\pi < x < \frac{\pi}{2} + 2k\pi$
39	$y = \sqrt{\frac{\lvert sinx + cosx\rvert + 1}{cosx - cos^2x}}$	$-\frac{\pi}{2} + 2k\pi < x < \frac{\pi}{2} + 2k\pi \wedge x \neq 2k\pi$
40	$y = \frac{1}{\sqrt{sin2x - tanx}}$	$k\frac{\pi}{2} < x < \frac{\pi}{4} + k\frac{\pi}{2}$
41	$y = \sqrt{\frac{\sqrt{2}sin^2x}{cosx} - tan^2x}$ $x \in (0;\ 2\pi)$	$0 < x \leq \frac{\pi}{4} \vee \{\pi\} \vee \frac{7}{4}\pi \leq x < 2\pi$
42	$y = \sqrt{4sinx\ cosx - 2\sqrt{3}cosx - 2sinx + \sqrt{3}}$ $x \in [0; 2\pi]$	$\left\{\frac{\pi}{3}\right\} \vee \frac{2}{3}\pi \leq x \leq \frac{5}{3}\pi$