

Výsledky:

A) Řešte základní goniometrické rovnice:

rovnice	úpravy	X_0	Kvadrant	Výsledek
a) $\operatorname{tg} x = -\frac{\sqrt{3}}{3}$	$\operatorname{tg} x_0 = \frac{\sqrt{3}}{3}$	$\frac{\pi}{6} = 30^\circ$	II.	$x \in \left\{ \frac{5\pi}{6} + k\pi \right\}, k \in \mathbb{Z}$
b) $2 \sin x = \sqrt{2}$	$2 \sin x = \sqrt{2}$ $\sin x = \frac{\sqrt{2}}{2}$	$\frac{\pi}{4} = 45^\circ$	I., II.	$x \in \left\{ \frac{\pi}{4} + k2\pi, \frac{3\pi}{4} + k2\pi \right\}, k \in \mathbb{Z}$
c) $\cos 3x = -1$	$3x = a$ $\cos a = -1$ $a = \pi + k2\pi \Rightarrow x = \frac{\pi}{3} + k \frac{2\pi}{3}$	$\frac{\pi}{3} = 60^\circ$	--	$x \in \left\{ \frac{\pi}{3} + k \frac{2\pi}{3} \right\}, k \in \mathbb{Z}$
d) $4 \cos 5x = -9$	$4 \cos 5x = -9$ $\cos 5x = -\frac{9}{4}$	--	--	\emptyset
e) $3 \cot g 2x = \sqrt{3}$	$3 \cot g 2x = \sqrt{3}$ $\cot g 2x = \frac{\sqrt{3}}{3}$ $2x = a$ $\cot g a = \frac{\sqrt{3}}{3}$ $a = \frac{\pi}{3} + k\pi \Rightarrow x = \frac{\pi}{6} + k \frac{\pi}{2}$	$\frac{\pi}{6} = 30^\circ$	I.	$x \in \left\{ \frac{\pi}{6} + k \frac{\pi}{2} \right\}, k \in \mathbb{Z}$
f) $\sin^2 x - \sin x = 0$	$\sin^2 x - \sin x = 0$ $\sin x \cdot (\sin x - 1) = 0 \Rightarrow$ $\sin x = 0 \vee \sin x = 1$	$x_{01} = 0$ $x_{02} = \frac{\pi}{2}$	--	$x \in \left\{ \frac{\pi}{2} + k2\pi, \pi + k2\pi \right\}, k \in \mathbb{Z}$

B) Řešte základní goniometrické rovnice:

rovnice	úpravy	x_0	Kvadrant	Výsledek
a) $\cotg x = -\sqrt{3}$	$\cotg x_0 = \sqrt{3}$	$\frac{\pi}{6}$	II.	$x \in \left\{ \frac{5\pi}{6} + k\pi \right\}$ $k \in \mathbb{Z}$
b) $2 \cos x = \sqrt{3}$	$2 \cos x = \sqrt{3}$ $\cos x = \frac{\sqrt{3}}{2}$	$\frac{\pi}{6}$	I., IV.	$x \in \left\{ \frac{\pi}{6} + k2\pi, \frac{11\pi}{6} + k2\pi \right\}$ $k \in \mathbb{Z}$
c) $\sin 2x = -1$	$2x = a$ $\sin a = -1$ $a = \frac{3\pi}{2} + k2\pi \Rightarrow x = \frac{3\pi}{4} + k\pi$			$x \in \left\{ \frac{3\pi}{4} + k\pi \right\}$ $k \in \mathbb{Z}$
d) $3 \cos 6x = -5$	$3 \cos 6x = -5$ $\cos 6x = -\frac{5}{3}$			\emptyset
e) $\sqrt{3} \cotg 3x = 3$	$\sqrt{3} \cotg 3x = 3$ $\cotg 3x = \sqrt{3}$ $3x = a \Rightarrow \cot ga = \sqrt{3}$ $a = \frac{\pi}{6} + k\pi \Rightarrow x = \frac{\pi}{18} + k\frac{\pi}{3}$		I.	$x \in \left\{ \frac{\pi}{18} + k\frac{\pi}{3} \right\}$ $k \in \mathbb{Z}$
f) $\cos^2 x + \cos x = 0$	$\cos^2 x + \cos x = 0$ $\cos x \cdot (\cos x + 1) = 0 \Rightarrow$ $\cos x = 0 \vee \cos x = -1$	$x_{01} = \frac{\pi}{2}$ $x_{02} = \pi$	--	$x \in \left\{ \frac{\pi}{2} + k\pi, \pi + k2\pi \right\}$ $k \in \mathbb{Z}$