Trigonometrie Aufgabe 257

$\sin x - \cot x = 0$

$\sin x - \dfrac{\cos x}{\sin x} = 0 \mid * \sin x$

$\sin^2 x - \cos x = 0$

$1 - \cos^2 x - \cos x = 0 \mid +\cos^2 x$

$1 - \cos x = \cos^2 x \mid +\cos x$

$1 = \cos^2 x + \cos x \mid -1$

$\cos^2 x + \cos x - 1 = 0$

p, q – Formel:

$p = 1, q = -1$

$\cos x_{1,2} = \dfrac{-1}{2} \pm \sqrt{0{,}5^2 - (-1)}$

$\cos x_{1,2} = -0{,}5 \pm \sqrt{0{,}25 + 1}$

$\cos x_{1,2} = -0{,}5 \pm \sqrt{1{,}25}$

$\cos x_{1,2} = -0{,}5 \pm 1{,}118$

$\cos x_1 = -0{,}5 + 1{,}118 = 0{,}618 \longrightarrow x = 51{,}8°$ oder $308{,}2°$

$\cos x_2 = -0{,}5 - 1{,}118 = -1{,}618$ keine Lösung, $|-1{,}618| > 1$

Lösungsmenge **L = {51,8°}**