chapter 2

Trigonometry 1

Section 2.8 General solutions of trigonometric equations

PROJECT MATHS – STRAND 2
Text & Tests 4
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To find the general solution of $\sin x = k$ or $\cos x = k$, you find the two solutions in the interval $0° \leqslant \theta \leqslant 360°$ and then add $n360°$ to each of the solutions.

Example 1

Find the general solution of the equation $\cos\theta = -\frac{\sqrt{3}}{2}$, θ in radians.

$\pi = 180°$

$\theta = \cos^{-1}\left(-\frac{\sqrt{3}}{2}\right) = 150°$ $\left(\frac{5\pi}{6}\right)$

tan ⊖ cos ⊖ sin ⊕ | all ⊕ | S | A | T | C | tan ⊕ sin ⊖ cos ⊕ | cos ⊕ sin ⊖ tan ⊖

150° 30° 30° 150° 210°

other soln $\theta = 210°$ $\left(\frac{7\pi}{6}\right)$