

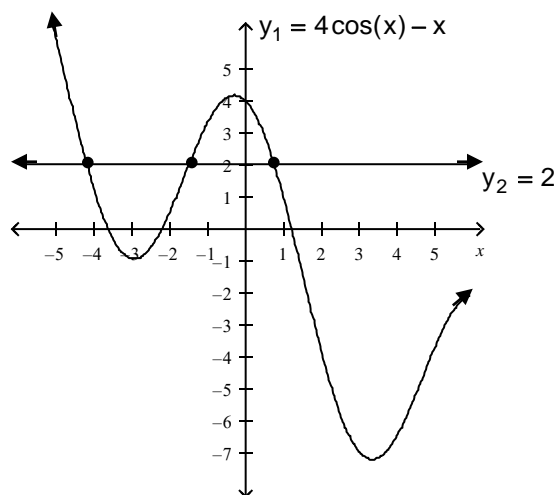
Section 7.3 – Trigonometric Equations – Day 2Solve Trigonometric Equations Using a Graphing Utility

The techniques introduced in this section apply only to certain types of trigonometric equations. Solutions for other types are usually studied in calculus, using numerical methods.

Example 7: Solve the equation: $4 \cos x - x = 2$

Express the solutions rounded to two decimal places.

This type of trigonometric equation cannot be solved by previous methods. A graphing utility, though, can be used here. Each solution of this equation is the x-coordinate of a point of intersection of the graphs of $Y_1 = 4 \cos(x) - x$ and $Y_2 = 2$.



There are three points of intersection: the x-coordinates provide the solutions. Use INTERSECT, to find $x = -4.146081$, $x = -1.489362$, and $x = 0.796591$.

The solution set is $\{-4.15, -1.49, 0.80\}$