

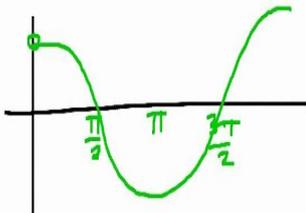
# Trigonometry: Solving Trigonometric Equations

$$\text{Solve } 2\cos x = \sqrt{2} \quad \underline{0 \leq x < 2\pi}$$

$$\cos x = \frac{\sqrt{2}}{2}$$

$$x = \arccos\left(\frac{\sqrt{2}}{2}\right)$$

$$x = \frac{\pi}{4}$$



Purplemath. Solving trig equations use both the reference angles and trigonometric identities that you've memorized, together with a lot of the algebra you've learned. Learn how to solve trigonometric equations and how to use trigonometric identities to solve various problems. In this section we will take a look at solving trig equations. This is something that you will be asked to do on a fairly regular basis in my class. Let's just jump into it. Now that the equation involves only a single trig function, your next task is to solve for that function value. Free trigonometric equation calculator - solve trigonometric equations step-by-step. Use standard algebraic techniques to solve trigonometric equations. Solve trigonometric equations of quadratic type. Solve trigonometric equations involving trigonometric identities. This Precalculus review (Calculus preview) lesson reviews how to solve the type of trig equations that come up in Calculus. Learn how to solve trigonometric equations in Higher Maths involving trigonometric identities. Therefore since the trig equation we are solving is  $\cos$  and it is positive, then we are in the first and fourth quadrants. This section illustrates the process of solving trigonometric equations of various forms. It also shows you how to check your answer three different ways. Solving trigonometric equations requires that we find the value of the angles that satisfy the equation. If a specific interval for the solution is given, then we need to restrict the solutions to that interval. How to Solve Trigonometric Equations. A trig equation is an equation containing one or many trig functions of the variable  $x$ . Solving for  $x$ . Trigonometry tutorial written by Darryl K, a tutor on The Knowledge Roundtable: This is part 2 of 2 on Solving Trigonometric Equations (see Solving Trigonometric Equations). We are now going to combine our Algebra skills with our knowledge of Trig Identities and the Unit Circle and begin Solving Trigonometric Equations! Trigonometric equations are equations including trigonometric functions. If they have only such functions and constants, then the solution involves finding the reference angle. Take the square root of both sides of the equation to eliminate the exponent on the variable. The complete solution is the result of both the positive and negative portions of the reference angle. Examples of solving trigonometric equations analytically and graphically. Home; Analytic Trigonometry; 5. Trigonometric equations can be solved using the algebraic methods and trigonometric identities and values. Solving trig equations is just finding the solutions of equations like we did with linear, quadratic, and radical equations, but using trig functions instead. We will use the same techniques. Editorial Reviews. About the Author. Wendy Lawson: math teacher, B.S. in Math, M.A. in Mathematics. Trigonometry: Solving trigonometric equations and inequalities - Kindle edition by Nghi Nguyen, Wendy Lawson. Download it once and read it on your Kindle device, PC, or mobile app. Restrict the domain: Solve  $-\sin x = \cos x$  and solve your problem? Make a plot and solve. The trigonometry equations that require finding a greatest common factor, factoring it out, and then solving the equation could look like one of the following two. Solving Trigonometric Equations using Trigonometric Identities. An equation that contains trigonometric functions is called a trigonometric equation. Example. This lesson covers how to solve a trig equation using algebra. Solving Trigonometric Equations. Use standard algebraic techniques learned in Algebra II. Look for factoring and collecting like terms. Isolate the trig function. If substitution makes the equation look like a

quadratic equation, then we can use the same methods for solving quadratics to solve the trigonometric equations.

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