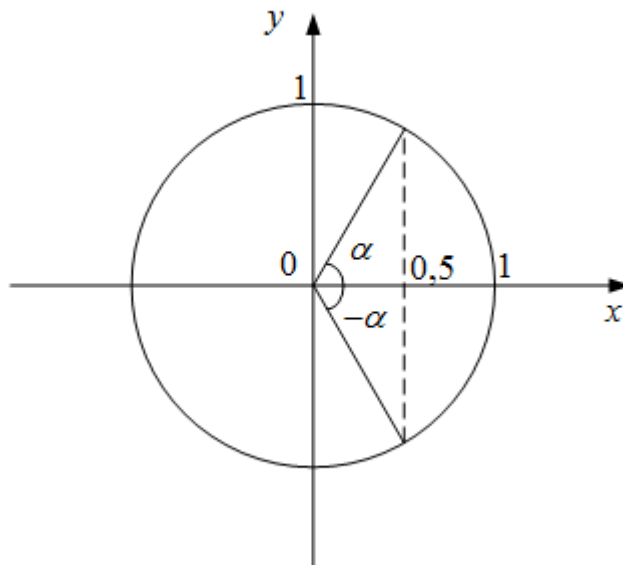


$\cos(2x) = \frac{1}{2}$ interval $[0, \pi]$ solve the equation

Solution.



Angles of the unit circumference which have cosine equal to $\frac{1}{2}$: $\alpha + 2\pi k$ and $-\alpha + 2\pi k$, where $\alpha = \arccos\left(\frac{1}{2}\right) = \frac{\pi}{3}$; k is integer. We can write this in the form: $\alpha = \pm \arccos\left(\frac{1}{2}\right) + 2\pi k = \pm \frac{\pi}{3} + 2\pi k$. Comparing with the original equation we have $2x = \alpha$; $x = \frac{\alpha}{2} = \pm \frac{\pi}{6} + \pi k$. There is only one solution in the interval $[0, \pi]$: $x = \frac{\pi}{6}$.

Answer: $x = \frac{\pi}{6}$.