

15. $\cos 2x + 2 = 6 \cos^2 \frac{x}{2} - 3$

$\cos 2x + 2 = 3(2 \cos^2 \frac{x}{2} - 1)$

$2 \cos^2 x - 1 + 2 = 3 \cos(2 \cdot \frac{x}{2}) = 3 \cos x$

$2 \cos^2 x - 3 \cos x + 1 = 0$

$\cos x = \frac{3 \pm 1}{2} = \begin{matrix} 1 \\ -1/2 \end{matrix}$

$\cos x = 1$
 $x = 360k$

$\cos x = 1/2$
 $\cos x = \cos 60$
 $x = \pm 60 + 360k$

$\cos x = 2 \cos^2 \frac{x}{2} - 1$

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

$\cos x \rightarrow$ תשובה נוספת

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$\sin 2x + \cos 2x = -1$

$\sin 2x + \tan 45 \cos 2x = -1$

$\sin 2x + \frac{\sin 45}{\cos 45} \cos 2x = -1 \quad / \cdot \cos 45$

$\sin 2x \cos 45 + \sin 45 \cos 2x = -\cos 45 = -\sin 45 = \sin(-45)$

$\sin(2x + 45) = \sin(-45)$

$2x + 45 = -45 + 360k$

$2x = -90 + 360k$

$x = -45 + 180k$

$2x + 45 = 180 - (-45) + 360k$

$2x = 180 + 360k$

$x = 90 + 180k$

$1 = \tan 45$

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$\sin 4x + \cos 4x = 1 - 2 \sin 2x \quad / + 2 \sin 2x$

$\sin^2 4x + \sin 2x + \cos^2 4x + \sin 2x = 1$

$2 \sin 2x \cos 2x + \sin 2x + 1 - 2 \sin^2 2x + \sin 2x = 1 \quad / -1$

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

$2 \sin 2x (\cos 2x + 1 - \sin 2x) = 0$

$2 \sin 2x = 0$

$\sin 2x = 0$

$2x = 360k$

$x = 180k$

$2x = 180 + 360k$

$x = 90 + 180k$

$\cos 2x - \sin 2x = -1$

$\cos 2x - \tan 45 \sin 2x = -1$

$\cos 2x - \frac{\sin 45}{\cos 45} \sin 2x = -1$

$\cos 2x \cos 45 - \sin 45 \sin 2x = -\cos 45 = \cos 135$

$\cos(2x + 45) = \cos 135$

$2x + 45 = 135 + 360k$

$2x = 90 + 360k$

$x = 45 + 180k$

$2x + 45 = -135 + 360k$

$2x = -180 + 360k$

$x = -90 + 180k$