$\cos^3 x - \sin^3 x + \cos^2 x - \sin^2 x$

$(\cos x - \sin x)(\cos^2 x + \cos x \cdot \sin x + \sin^2 x) + (\cos x - \sin x)(\cos x + \sin x)$

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

$(\cos x - \sin x)(1 - \sin^2 x + \cos x \cdot \sin x + \sin^2 x) + (\cos x - \sin x)(\cos x + \sin x)$

$(\cos x - \sin x)(\cos x \cdot \sin x + \cos x + \sin x + 1)$

$(\cos x - \sin x)(\cos x(\sin x + 1) + (\sin x + 1))$

$(\cos x - \sin x)(\sin x + 1)(\cos x + 1)$