7.85 → 1 $n=1$ $2[\cos^2 x]-1 = \frac{\sin 4x}{2\sin 2x} = \frac{2\sin 2x \cos 2x}{2\sin 2x} = \cos 2x$ ✓

$n=k+1$ $2[\cos^2 x + \cos^2 3x + \dots + \cos^2(2n-1)x + \cos^2(2n+1)x] - (n+1) \overset{?}{=} \frac{\sin(4n+4)x}{2\sin 2x}$

$\frac{\sin 4nx}{2\sin 2x} + 2\cos^2(2n+1)x - 1 \overset{?}{=}$ "

$\frac{\sin 4nx}{2\sin 2x} + \cos(4n+2)x \overset{?}{=}$ "

$\frac{\sin 4nx + 2\sin 2x \cos(4n+2)x}{2\sin 2x} \overset{?}{=}$ "

$\frac{\sin 4nx + \sin(4n+4)x + \sin(4nx)}{2\sin 2x} =$