Zadatak 38.   Ako je $f\left(\alpha-\frac{\pi}{2}\right)=\sin\left(\alpha+\frac{\pi}{2}\right)\cdot\cos\left(\alpha+\frac{\pi}{2}\right)$, koliko je $f\left(\alpha-\pi\right)+f\left(\frac{3\pi}{2}+\alpha\right)$?

Rješenje. $f\left(\alpha-\dfrac{\pi}{2}\right)=\sin\left(\alpha+\dfrac{\pi}{2}\right)\cos\left(\alpha+\dfrac{\pi}{2}\right)=\dfrac{1}{2}\sin(2\alpha+\pi),$

$\alpha-\dfrac{\pi}{2}=t \iff \alpha=t+\dfrac{\pi}{2};$

$f\left(t\right)=\dfrac{1}{2}\sin\left[2\left(t+\dfrac{\pi}{2}\right)+\pi\right]=\dfrac{1}{2}\sin(2t+\pi+\pi)=\dfrac{1}{2}\sin(2t+2\pi)=\dfrac{1}{2}\sin 2t;$

$f\left(\alpha-\pi\right)+f\left(\dfrac{3\pi}{2}+\alpha\right)=\dfrac{1}{2}\sin(2\alpha-2\pi)+\dfrac{1}{2}\sin(3\pi+2\alpha)$

$=\dfrac{1}{2}\sin 2\alpha+\dfrac{1}{2}\sin(2\alpha+\pi)=\dfrac{1}{2}\sin 2\alpha-\dfrac{1}{2}\sin 2\alpha=0.$