

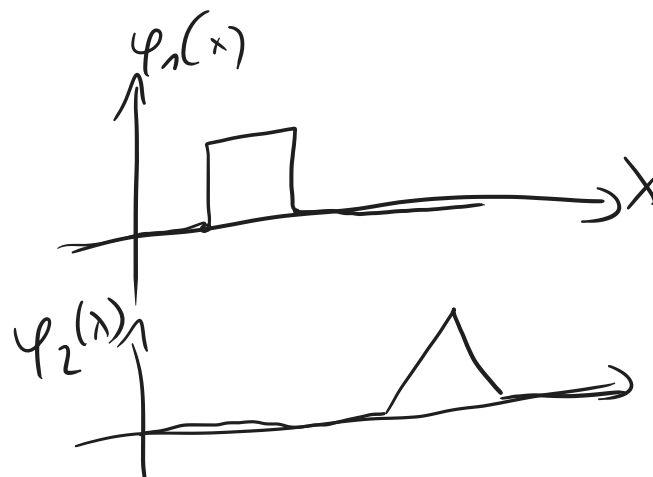
$$\varphi_1(x)$$

$$\varphi_2(x)$$

← DANE

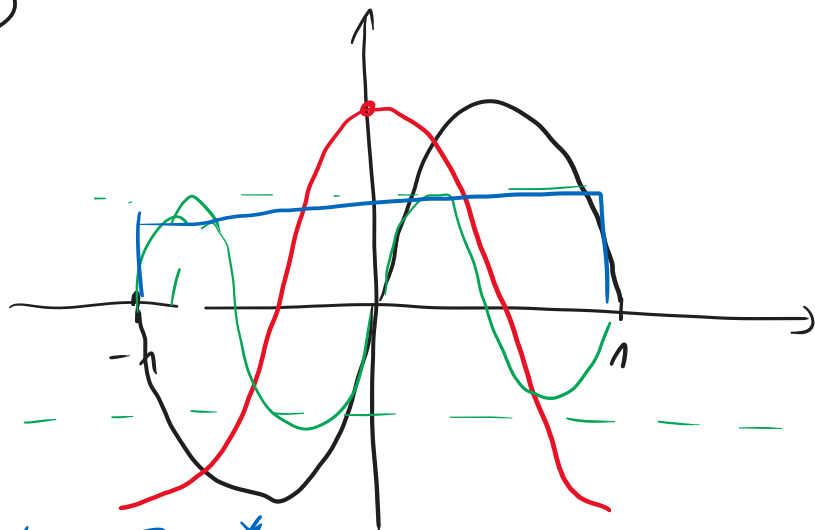
PRZYKŁAD ILOCZYNU SKALARNY

$$\varphi_1(x) \circ \varphi_2(x) \triangleq \int_D \varphi_1(x) \cdot \varphi_2(x) dx$$



(P2)

$$D \in [-1, 1]$$



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

$$\sin 2x = 2 \sin x \cos x$$

$$\varphi_1(x) = \sin \pi x$$

$$\varphi_2(x) = \cos \pi x$$

$$\varphi_3(x) = c = \frac{1}{\sqrt{2}}$$

$$\int \varphi_1^2 = 1$$

$$\int \varphi_2^2 = 1$$

$$\int \varphi_3^2 = 1$$

$$\int_{-1}^1 \sin \pi x \cdot \cos \pi x dx = 0$$

$$\frac{1}{2} \sin 2\pi x$$

$$\varphi_4(x) = \sin 2\pi x$$

$$\varphi_5(x) = \cos 2\pi x$$

$$\varphi_6(x) = \sin 3\pi x$$

$$\varphi_7(x) = \cos 3\pi x \dots$$