

$$\begin{aligned}x &= x, \quad y = x^2, \quad -2 \leq x \leq 1, \\W &= \int_{-2}^1 \langle x \sin x^2, x^2 \rangle \cdot \langle 1, 2x \rangle dx = \int_{-2}^1 (x \sin x^2 + 2x^3) dx \\&= \left[-\frac{1}{2} \cos x^2 + \frac{1}{2} x^4 \right]_{-2}^1 = \frac{1}{2} (-15 + \cos 4 - \cos 1) .\end{aligned}$$