

A két görbe metszéspontjaira:

$$\sin x = \left(\frac{4}{\pi}\right)^2 \sin \frac{\pi}{4} x^2.$$

Innen

$$x = 0 \quad \text{és} \quad x = \frac{\pi}{4}.$$

A keresett terület:

$$\begin{aligned} t &= \int_0^{\frac{\pi}{4}} \left(\sin x - \frac{16}{2} \sin \frac{\pi}{4} x^2 \right) dx = \left[-\cos x - \frac{1}{3} \cdot \frac{16}{\pi^2} \sin \frac{\pi}{4} x^3 \right]_0^{\frac{\pi}{4}} = \\ &= -\frac{\sqrt{2}}{2} - \frac{1}{3} \cdot \frac{16}{\pi^2} \sin \frac{\pi}{4} \cdot \frac{\pi^3}{4^3} + 1 = 1 - \frac{\sqrt{2}}{2} \left(1 + \frac{\pi}{12} \right). \end{aligned}$$