**Aufgabe 12.44**

Ermitteln Sie $f'\left(\dfrac{\sqrt{\pi}}{2}\right)$ für $f(t) = \sqrt{1+\cos^2 t^2}$ !

**Lösung:**

$$f'(t) = \frac{1}{2\sqrt{1+\cos^2 t^2}}\, 2\cos t^2\,(-\sin t^2)\,2t = -\frac{2\sin t^2 \cos t^2\, t}{\sqrt{1+\cos^2 t^2}}$$

$$f'\left(\frac{\sqrt{\pi}}{2}\right) = -\frac{2\sin\frac{\pi}{4}\,\cos\frac{\pi}{4}\,\frac{\sqrt{\pi}}{2}}{\sqrt{1+\cos^2\frac{\pi}{4}}} = -\frac{2\frac{1}{\sqrt{2}}\frac{1}{\sqrt{2}}\frac{\sqrt{\pi}}{2}}{\sqrt{1+\frac{1}{2}}} = -\frac{\frac{\sqrt{\pi}}{2}}{\frac{\sqrt{3}}{\sqrt{2}}} = -\sqrt{\frac{\pi}{6}}$$