

5.5:44

Evaluier  $\frac{d}{d\theta} \int_{\sin\theta}^{\cos\theta} \frac{dx}{1-x^2}$

Lösung

La  $F(t) = \int_0^t \frac{dx}{1-x^2}$  da er  $F'(t) = \frac{1}{1-t^2}$

$$\frac{d}{d\theta} (F(\cos\theta) - F(\sin\theta))$$

$$= F'(\cos\theta)(-\sin\theta) - F'(\sin\theta)\cos\theta$$

$$= \frac{-\sin\theta}{1-\cos^2\theta} - \frac{\cos\theta}{1-\sin^2\theta}$$

$$= -\frac{1}{\sin\theta} - \frac{1}{\cos\theta}$$

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