

Aufgabe 5b

$$\int_a^x (\sin(t))^5 \cdot \cos(t) dt$$

a Integration durch Substitution

$$u = \sin(t) \quad \frac{du}{dt} = \cos(t)$$

$$\int_{\sin(a)}^{\sin(x)} u^5 du = \left[\frac{u^6}{6} \right]_{\sin(a)}^{\sin(x)} \quad \frac{du}{dt} = \cos(t) dt$$

$$= \frac{\sin^6(x) - \sin^6(a)}{6}$$