

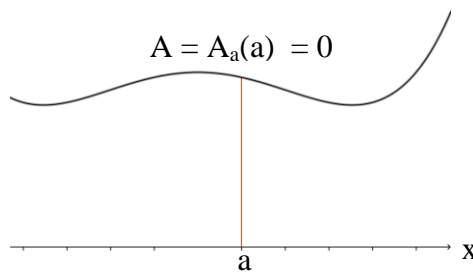
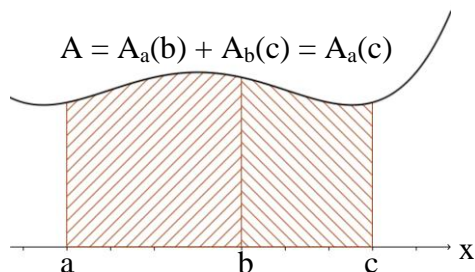
Eigenschaften des Integrals:

$$1) \int (f(x) + g(x)) dx = \int f(x) dx + \int g(x) dx$$

$$2) \int c \cdot f(x) dx = c \cdot \int f(x) dx$$

$$3) \int_a^b f(x) dx + \int_b^c f(x) dx = \int_a^c f(x) dx$$

$$4) \int_a^a f(x) dx = 0$$



$$5) \int_b^a f(x) dx = -\int_a^b f(x) dx$$

Hauptsatz der Integral- und Differenzialrechnung:

$$1) \left(\int_a^x f(u) du \right)' = f(x)$$

$$2) \int_a^x f'(u) du = f(x), \text{ wenn } f(a) = 0,$$

d.h., Integrieren ist die Umkehrung zum Differenzieren.