

387e Mathematik am 8.3.2023

• 6.49b, 6.501)4)

$$6.49b) \int k \cdot \frac{dV}{V} = \int k \cdot \frac{1}{V} dV = \underline{\underline{k \cdot \ln(|V|) + C}}$$

$$6.501) \int (a \cdot x + b) dx = \underline{\underline{\frac{ax^2}{2} + b \cdot x + C}}$$

$$4) \int (a \cdot x + b) dt = a \cdot x \cdot t + b \cdot t = \underline{\underline{t(ax + b) + C}}$$

6.51) 1) 2) 3) 4)

$$1) \int \frac{r \cdot t + s}{r} dt = \frac{r \cdot t}{r} + \frac{s}{r} = \underline{\underline{\frac{r \cdot t^2}{2} + \frac{st}{r} + C}} = \underline{\underline{\frac{t^2}{2} + \frac{st}{r} + C}}$$

$$2) \int \frac{r \cdot t + s}{r} dr = \cancel{\frac{r \cdot t}{r} + \frac{s}{r}} = \underline{\underline{\frac{r \cdot t \cdot r}{r} + \frac{s}{r} = r \cdot t + s \cdot \ln(|r|) + C}}$$

$$3) \int \frac{r \cdot t + s}{r} ds = \frac{s \cdot r \cdot t}{r} + \frac{s^2}{2r} = \underline{\underline{s \cdot t + \frac{s^2}{2r} + C}}$$

$$4) \int \frac{r \cdot t + s}{r} dx = \underline{\underline{\left(\frac{r \cdot t + s}{r} \right) \cdot x + C}}$$

$$6.54a) F(x) = \int (2x + 1) dx = F(0) = 2$$

$$F(0) = 2 = 2 \cdot \frac{x^2}{2} + 1x = \underline{\underline{x^2 + x + 2}}$$

$$b) \int t^2 dt; F(0) = 0$$

$$F(0) = 0 = \underline{\underline{\frac{t^3}{3} + 0}}$$