

Eksponentti- ja trigonometrinen funktioiden integrointi

$$\begin{aligned} E1 \quad & \int e^{4x} dx \\ &= \frac{1}{4} \int \cancel{x} \cdot e^{4x} dx \\ &= \frac{1}{4} e^{4x} + C \end{aligned}$$

$$\begin{aligned} s(x) &= 4x \\ s'(x) &= 4 \end{aligned}$$

$$4 \cdot \frac{1}{4} = 1$$

$$\int e^x dx = e^x + C$$

$$D \sin x = \cos x$$

$$D \cos x = -\sin x$$

$$\int \sin x dx = -\cos x + C$$

$$\int \cos x dx = \sin x + C$$

$$E2 \quad \int 3 \sin 4x dx$$

$$= 3 \int \sin 4x dx$$

$$= 3 \cdot \frac{1}{4} \int \sin 4x dx$$

$$= -\frac{3}{4} \cos 4x + C$$

$$\left. \begin{array}{l} s(x) = 4x \\ s'(x) = 4 \end{array} \right|$$