



4.1.1

$$\int x^6 dx = \frac{1}{6+1}x^{6+1} + C = \frac{1}{7}x^7 + C.$$

4.1. 11

$$\int \frac{1}{x^3} dx = \int x^{-3} dx = \frac{1}{-3+1}x^{-3+1} + C = \frac{1}{-2}x^{-2} + C = \frac{-1}{2x^2} + C.$$

4.1. 31

$$\int 5e^{5x} dx = 5 \int e^{3x} dx.$$

Siden $\frac{d}{dx}(\frac{1}{3}e^{3x}) = e^{3x}$, har vi da at

$$\int 5e^{5x} dx = 5\frac{1}{3}e^{3x} + C = \frac{5}{3}e^{3x} + C.$$

4.1.37

$$\begin{aligned} \int (5x^2 - 2e^{7x}) dx &= 5 \int x^2 dx - 2 \int e^{7x} dx \\ &= 5\frac{1}{2+1}x^{2+1} - 2\frac{1}{7}e^{7x} + C \\ &= \frac{5}{3}x^3 - \frac{2}{7}e^{7x} + C, \end{aligned}$$

der vi har brukt samme regel som i oppgave 4.1.31.