

Review: Integrals

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$$\int x^3 dx = \frac{x^4}{4} + C$$

$$\int \frac{2x dx}{(x^2+1)^3}$$

$$\left. \begin{array}{l} \text{let } u = x^2 + 1 \\ du = 2x dx \end{array} \right\}$$

$$= \int \frac{du}{u^3}$$

$$= \int u^{-3} du$$

$$= \frac{u^{-2}}{-2} + C$$

$$= \frac{(x^2+1)^{-2}}{-2} + C$$

$$= -\frac{1}{2(x^2+1)^2} + C$$