$$\int x^n dx = \frac{x^{n+1}}{n+1} + C \qquad n \neq -1$$

- $\int \frac{1}{x^3} dx$

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