

$$\int \frac{dx}{x-a} = \ln |x-a| + C$$

$$\int \frac{dx}{(x-a)^k} = \int (x-a)^{-k} dx =$$
$$\stackrel{(k>1)}{=} -\frac{1}{-k+1} (x-a)^{-k+1} + C = -\frac{1}{(k-1)(x-a)^{k-1}} + C$$

$$\int \sin mx \, dx = -\frac{1}{m} \cos mx + C,$$
$$(m \neq 0)$$

$$\int \cos mx \, dx = \frac{1}{m} \sin mx + C$$

$$\int e^{-3x} \, dx = -\frac{1}{3} e^{-3x} + C$$

$$\int \frac{dx}{\sqrt{a^2 - x^2}} = \frac{1}{a} \int \frac{dx}{\sqrt{1 - \left(\frac{x}{a}\right)^2}} = \arcsin \frac{x}{a} + C$$
$$(a > 0)$$

$$\int \frac{dx}{a^2 + x^2} = \frac{1}{a^2} \int \frac{dx}{1 + \left(\frac{x}{a}\right)^2} = \frac{1}{a} \arctg \frac{x}{a} + C$$

$$\int \frac{(e^x - 1)(e^{2x} + 1)}{e^x} \, dx = \int (e^{2x} - e^x + 1 - e^{-x}) \, dx =$$
$$= \frac{1}{2} e^{2x} - e^x + x + e^{-x} + C$$