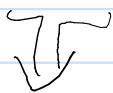$$\int x^m \, dx = \frac{x^{m+1}}{m+1} + C$$

$$\int 4 \, dx = 4 \int dx = 4x + C$$

$$\int 4 x^0 \, dx = 4 \frac{x^1}{1} + C$$

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

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

$$\int \sec^2 x \, dx = \tan x + C$$

$$\int \cos^2 x \, dx = -\cot x + C$$

$$\int \sec x \tan x \, dx = \sec x + C$$

$$\int \cos x \cot x \, dx = -\cos x + C$$

定 definite integral

$$\int_1^2 6x^2 \, dx = 2x^3 \Big|_1^2$$

$$= [2(2)^3] - [2(1)^3]$$

$$= 16 - 2 = 14$$

$$\int e^u \, du = \frac{e^u}{u'} \quad \text{if } u \text{ is linear} \quad (ax+b)$$

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

$$\int \frac{x}{4} \, dx = \frac{1}{4} \frac{x^2}{2} = \frac{x^2}{8} + C$$

$$\int [7x^1 - 6] \, dx = \frac{7x^2}{2} - 6x + C$$

$$\int e^{5x} \, dx = \frac{e^{5x}}{5} + C$$

$$\int e^{-7x} \, dx = \frac{e^{-7x}}{-7} + C$$

$$\int e^{3x-5} \, dx = \frac{e^{3x-5}}{3} + C$$