If f (x) is continuous function and **F `(x) = f(x)** then $\boxed{\int f(x)dx = F(x) + C}$, where C is an arbitrary constant.

Table of basic integrals:

1. $\int dx = x + C$
2. $\int xdx = \frac{x^2}{2} + C$
3. $\boxed{\int x^n dx = \frac{x^{n+1}}{n+1} + C}$ the most widely used...
4. $\int \frac{1}{x} dx = \ln|x| + C$ or $\int \frac{dx}{x} = \ln|x| + C$
5. $\int a^x dx = \frac{a^x}{\ln a} + C$
6. $\int e^x dx = e^x + C$
7. $\int \sin x dx = -\cos x + C$
8. $\int \cos x dx = \sin x + C$
9. $\int \frac{1}{\sin^2 x} dx = -ctgx + C$
10. $\int \frac{1}{\cos^2 x} dx = tgx + C$
11. $\int \frac{1}{1+x^2} dx = \begin{matrix} arctgx + C \\ -arcctgx + C \end{matrix}$ or $\boxed{\int \frac{1}{a^2 + x^2} dx = \frac{1}{a} arctg \frac{x}{a} + C}$
12. $\int \frac{1}{\sqrt{1-x^2}} dx = \begin{matrix} \arcsin x + C \\ -arccocx + C \end{matrix}$ or $\boxed{\int \frac{1}{\sqrt{a^2 - x^2}} dx = \arcsin \frac{x}{a} + C}$

These are the basic tablet integrals.Some professors allow you to use as a tablet:

13. $\int \frac{dx}{1-x^2} = \frac{1}{2} \ln \left| \frac{1+x}{1-x} \right| + C$ $\boxed{\int \frac{dx}{a^2 - x^2} = \frac{1}{2a} \ln \left| \frac{a+x}{a-x} \right| + C}$ or $\boxed{\int \frac{dx}{x^2 - a^2} = \frac{1}{2a} \ln \left| \frac{x-a}{x+a} \right| + C}$
14. $\int \frac{dx}{\sqrt{x^2 \pm 1}} = \ln \left| x + \sqrt{x^2 \pm 1} \right| + C$ $\boxed{\int \frac{dx}{\sqrt{x^2 \pm a^2}} = \ln \left| x + \sqrt{x^2 \pm a^2} \right| + C}$