$$(\sin(x))' = \cos x; (\cos(x))' = -\sin x$$

$$(\tan x)' = \frac{1}{\cos^2(x)}; (\cot x)' = -\frac{1}{\sin^2(x)};$$

$$(e^x)' = e^x; (a^x)' = a^x \ln a; a > 0$$

$$(\ln x)' = \frac{1}{x}; (\log_a x)' = \frac{1}{x\ln(a)}; a > 0, a \neq 1$$

$$(x^\alpha)' = \alpha x^{\alpha-1}; \alpha \in \mathbf{R};$$

$$(\arcsin(x))' = \frac{1}{\sqrt{1-x^2}}; (\arccos(x))' = -\frac{1}{\sqrt{1-x^2}}$$

$$(\arctan(x))' = \frac{1}{1+x^2}; (arc\cot(x))' = -\frac{1}{1+x^2}$$

1) $\int x^\alpha dx = \frac{x^{\alpha+1}}{\alpha+1} + c, \alpha \neq -1$

2) $\int \frac{1}{x} dx = \ln|x| + c$

3) $\int \sin x\, dx = -\cos x + c$, $\quad \int \cos x\, dx = \sin x + C$

4) $\int \frac{dx}{\cos^2 x} = \tan x + c$

5) $\int \frac{dx}{\sin^2 x} = -\cot x + c$

6) $\int \tan x\, dx = -\ln|\cos x| + c$

7) $\int \cot x\, dx = \ln|\sin x| + c$

8) $\int a^x dx = \frac{a^x}{\ln a} + c$, $\quad \int e^x\, dx = e^x + C$

9) $\int \frac{1}{a^2+x^2} dx = \frac{1}{a} \arctan\left(\frac{x}{a}\right) + c$

10) $\int \frac{1}{a^2-x^2} dx = \frac{1}{2a} \ln\left|\frac{a+x}{a-x}\right| + c$

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

12) $\int \frac{1}{\sqrt{x^2 \pm a^2}} dx = \ln\left|x + \sqrt{x^2 \pm a^2}\right| + c$

13) $\int \frac{dx}{\sin x} = \ln\left|\tan \frac{x}{2}\right| + c$

14) $\int \frac{dx}{\cos x} = \ln\left|\tan\left(\frac{x}{2} + \frac{\pi}{4}\right)\right| + c$