

$$(\sqrt{x})' = \frac{1}{2\sqrt{x}}$$

$$f(x)^{g(x)} = e^{g(x) \cdot \ln f(x)}$$

$$\sqrt[n]{x^m} = x^{\frac{m}{n}}$$

$$\frac{1}{x^n} = x^{-n}$$

$$x^n = nx^{n-1}$$

$$\frac{1}{x^2} = x^{-2} = -2x^{-3}$$

$$\frac{a}{x} = -\frac{a}{x^2}$$

$$\pi = 1$$

$$(x^a)' = a \cdot x^{a-1}$$

$$(a^x)' = a^x \ln a$$

$$(\log_a x)' = \frac{1}{x \ln a}$$

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

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

$$(\operatorname{tg} x)' = \frac{1}{\cos^2 x}$$

$$(\operatorname{ctg} x)' = -\frac{1}{\sin^2 x}$$

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

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

$$(\operatorname{arctg} x)' = \frac{1}{1+x^2}$$

$$(\operatorname{arcctg} x)' = -\frac{1}{1+x^2}$$

$$\sqrt[b]{n^a} = x^{\frac{a}{b}} // \frac{1}{x^n} = x^{-a}$$

$$\cos 2x = \cos^2 x - \sin^2 x$$

$$1. \sqrt{x} = x^{\frac{1}{2}} + C$$

$$2. x^n = \frac{1}{n+1} x^{n+1} + C$$

$$3. x = \frac{1}{2} x^2 + C$$

$$4. \frac{1}{x} = \ln |x| + C$$

$$5. a^x = \frac{a^x}{\ln a} + C$$

$$6. e^{ax} = \frac{1}{a} e^{ax} + C$$

$$7. \sin x = -\cos x + C$$

$$7a. \sin ax = -\frac{1}{a} \cos ax + C$$

$$8. \cos x = \sin x + C$$

$$8a. \cos ax = \frac{1}{a} \sin ax + C$$

$$9. \operatorname{tg} x = -\ln |\cos x| + C$$

$$10. \operatorname{ctg} x = \ln |\sin x| + C$$

$$11. \frac{dx}{\cos^2 x} = \operatorname{tg} x + C$$

$$12. \frac{dx}{\sin^2 x} = -\operatorname{ctg} x + C$$

$$13. \frac{dx}{x^2 + a^2} = \frac{1}{a} \operatorname{arctg} \frac{x}{a} + C$$

$$14. \frac{dx}{x^2 - a^2} = \frac{1}{2a} \ln \left| \frac{x-a}{x+a} \right| + C$$

$$15. \frac{dx}{\sqrt{a^2 - x^2}} = \operatorname{arcsin} \frac{x}{a} + C$$

$$16. \frac{dx}{\sqrt{x^2 + q}} = \ln |x + \sqrt{x^2 + q}| + C$$

$$17. -\frac{1}{1+x^2} = \operatorname{arcctg} x + C$$

$$18. \frac{-1}{\sqrt{1-x^2}} = \arccos x + C$$