Приложение 1

Таблица производных

1. $c' = 0.$	7. $\left(\operatorname{tg} x\right)' = \dfrac{1}{\cos^2 x}.$
2. $\left(x^m\right)' = mx^{m-1};$ $\left(x\right)' = 1;$ $\left(\sqrt{x}\right)' = \dfrac{1}{2\sqrt{x}}.$	8. $\left(\operatorname{ctg} x\right)' = -\dfrac{1}{\sin^2 x}.$
3. $\left(a^x\right)' = a^x \ln a;$ $\left(e^x\right)' = e^x.$	9. $\left(\arcsin x\right)' = \dfrac{1}{\sqrt{1-x^2}}.$
4. $\left(\log_a x\right)' = \dfrac{1}{x \ln a};$ $\left(\ln x\right)' = \dfrac{1}{x}.$	10. $\left(\arccos x\right)' = -\dfrac{1}{\sqrt{1-x^2}}.$
5. $\left(\sin x\right)' = \cos x.$	11. $\left(\operatorname{arctg} x\right)' = \dfrac{1}{1+x^2}.$
6. $\left(\cos x\right)' = -\sin x.$	12. $\left(\operatorname{arcctg} x\right)' = -\dfrac{1}{1+x^2}.$
	--- $\left(uv\right)' = u'v + uv';$ $\left(\dfrac{u}{v}\right)' = \dfrac{u'v - uv'}{v^2};$ $\left(f(u)\right)' = f'(u) \cdot u'.$

Приложение 2

Таблица интегралов

1. $\int 0dx = C$.

2. $\int x^n dx = \frac{x^{n+1}}{n+1} + C, \quad n \neq -1; \quad \int 1dx = \int dx = x + C$.

3. $\int \frac{dx}{x} = \ln|x| + C, \quad x \neq 0$.

4. $\int a^x dx = \frac{a^x}{\ln a} + C, \quad a > 0;\ a \neq 1; \quad \int e^x dx = e^x + C$.

5. $\int \cos x dx = \sin x + C$.

6. $\int \sin x dx = -\cos x + C$.

7. $\int \frac{dx}{\cos^2 x} = \mathrm{tg}x + C$.

8. $\int \frac{dx}{\sin^2 x} = -\mathrm{ctg}x + C$.

9. $\int \frac{dx}{x^2 + a^2} = \frac{1}{a}\mathrm{arctg}\frac{x}{a} + C, \quad a \neq 0$.

10. $\int \frac{dx}{x^2 - a^2} = \frac{1}{2a}\ln\left|\frac{x-a}{x+a}\right| + C, \quad a \neq 0;\ x \neq \pm a$.

11. $\int \frac{dx}{\sqrt{a^2 - x^2}} = \arcsin\frac{x}{a} + C, \quad |x| < a;\ a \neq 0$.

12. $\int \frac{dx}{\sqrt{x^2 \pm a}} = \ln\left|x + \sqrt{x^2 \pm a}\right| + C, \quad a \neq 0; \quad x \neq \pm\sqrt{-a}$.

$\int udv = uv - \int vdu$.