

Таблица производных сложных функций

| $f(x)$  | $u^n$                      | $\sqrt{u}$                 | $\frac{1}{u}$            |                            |
|---------|----------------------------|----------------------------|--------------------------|----------------------------|
| $f'(x)$ | $n \cdot u^{n-1} \cdot u'$ | $\frac{u'}{2\sqrt{u}}$     | $-\frac{u'}{u^2}$        |                            |
| $f(x)$  | $\sin u$                   | $\cos u$                   | $\operatorname{tg} u$    | $\operatorname{ctg} u$     |
| $f'(x)$ | $\cos u \cdot u'$          | $-\sin u \cdot u'$         | $\frac{u'}{\cos^2 u}$    | $-\frac{u'}{\sin^2 u}$     |
| $f(x)$  | $e^u$                      | $a^u$                      | $\ln u$                  | $\log_a u$                 |
| $f'(x)$ | $e^u \cdot u'$             | $a^u \cdot \ln a \cdot u'$ | $\frac{u'}{u}$           | $\frac{u'}{u \cdot \ln a}$ |
| $f(x)$  | $\arcsin u$                | $\arccos u$                | $\operatorname{arctg} u$ | $\operatorname{arcctg} u$  |
| $f'(x)$ | $\frac{u'}{\sqrt{1-u^2}}$  | $-\frac{u'}{\sqrt{1-u^2}}$ | $\frac{u'}{1+u^2}$       | $-\frac{u'}{1+u^2}$        |