

Formulaire de dérivation

$$c' = 0$$

$$x' = 1$$

$$(u^n)' = nu^{n-1} \cdot u'$$

$$\left(\frac{1}{u}\right)' = -\frac{1}{u^2} \cdot u'$$

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

$$\left(\frac{1}{\sqrt{u}}\right)' = -\frac{1}{2\sqrt{u}^3} \cdot u'$$

$$(e^u)' = e^u \cdot u'$$

$$(a^u)' = a^u \cdot \ln a \cdot u'$$

$$(\ln |u|)' = \frac{1}{u} \cdot u'$$

$$(\log_a |u|)' = \frac{1}{u \cdot \ln a} \cdot u'$$

$$(\sin u)' = \cos u \cdot u'$$

$$(\cos u)' = -\sin u \cdot u'$$

$$(\tan u)' = \frac{1}{\cos^2 u} \cdot u' = (1 + \tan^2 u) u'$$

$$(\cot u)' = -\frac{1}{\sin^2 u} \cdot u'$$

$$(\sec u)' = \left(\frac{1}{\cos u}\right)' = \sec u \cdot \tan u \cdot u'$$

$$(\operatorname{cosec} u)' = \left(\frac{1}{\sin u}\right)' = -\operatorname{cosec} u \cdot \cot u \cdot u'$$

$$(\operatorname{Arc} \sin u)' = \frac{1}{\sqrt{1-u^2}} \cdot u'$$

$$(\operatorname{Arc} \cos u)' = -\frac{1}{\sqrt{1-u^2}} \cdot u'$$

$$(\operatorname{Arc} \tan u)' = \frac{1}{1+u^2} \cdot u'$$

$$(\operatorname{Arc} \sec u)' = \frac{1}{u \cdot \sqrt{u^2-1}} \cdot u'$$

Formulaire d'intégration

$$\int c \, du = cu + C$$

$$\int dx = x + C$$

$$\int u^n \, du = \frac{1}{n+1} u^{n+1} + C; \quad n \neq -1$$

$$\int \frac{1}{u} \, du = \ln|u| + C$$

$$\int \sqrt{u} \, du = \frac{2}{3} \sqrt{u^3}$$

$$\int \frac{1}{\sqrt{u}} \, du = 2\sqrt{u} + C$$

$$\int e^u \, du = e^u + C$$

$$\int a^u \, du = \frac{1}{\ln a} \cdot a^u + C$$

$$\int \ln x \, dx = x \cdot \ln x - x + C$$

$$\int \sin u \, du = -\cos u + C$$

$$\int \cos u \, du = \sin u + C$$

$$\int \tan u \, du = -\ln|\cos u| + C$$

$$\int \cot u \, du = \ln|\sin u| + C$$

$$\int \sec u \, du = \ln|\sec u + \tan u| + C$$

$$\int \operatorname{cosec} u \, du = \ln|\operatorname{cosec} u - \cot u| + C$$

$$\int \frac{1}{\sqrt{a^2-u^2}} \, du = \operatorname{Arc} \sin \frac{u}{a} + C$$

$$\int \frac{1}{\sqrt{u^2-a^2}} \, du = \ln\left|u + \sqrt{u^2-a^2}\right| + C$$

$$\int \frac{1}{a^2-u^2} \, du = \frac{1}{2a} \cdot \ln\left|\frac{u+a}{u-a}\right| + C; \quad a^2 > x^2$$

$$\int \frac{1}{a^2+u^2} \, du = \frac{1}{a} \cdot \operatorname{Arc} \tan \frac{u}{a} + C$$

$$\int \frac{1}{u \cdot \sqrt{u^2-a^2}} \, du = \frac{1}{a} \cdot \operatorname{Arc} \sec \frac{u}{a} + C$$