

Modèles d'intégration

$$1. \int u^n du = \frac{u^{n+1}}{n+1} + C \quad (n \neq -1)$$

$$2. \int \frac{1}{u} du = \ln |u| + C$$

$$3. \int e^u du = e^u + C$$

$$4. \int b^u du = \frac{b^u}{\ln b} + C \quad (b > 0 \text{ et } b \neq 1)$$

$$5. \int \sin u du = -\cos u + C$$

$$6. \int \cos u du = \sin u + C$$

$$7. \int \sec^2 u du = \operatorname{tg} u + C$$

$$8. \int \operatorname{cosec}^2 u du = -\operatorname{cotg} u + C$$

$$9. \int \sec u \operatorname{tg} u du = \sec u + C$$

$$10. \int \operatorname{cosec} u \operatorname{cotg} u du = -\operatorname{cosec} u + C$$

$$11. \int \operatorname{tg} u du = \ln |\sec u| + C$$

$$12. \int \operatorname{cotg} u du = \ln |\sin u| + C$$

$$13. \int \sec u du = \ln |\sec u + \operatorname{tg} u| + C$$

$$14. \int \operatorname{cosec} u du = \ln |\operatorname{cosec} u - \operatorname{cotg} u| + C$$

$$15. \int \frac{1}{\sqrt{a^2 - u^2}} du = \arcsin\left(\frac{u}{a}\right) + C \quad (a > 0)$$

$$16. \int \frac{1}{a^2 + u^2} du = \frac{1}{a} \operatorname{arctg}\left(\frac{u}{a}\right) + C$$

$$17. \int \frac{1}{u\sqrt{u^2 - a^2}} du = \frac{1}{a} \operatorname{arcsec}\left(\frac{u}{a}\right) + C \quad (a > 0)$$