

UNIVERSIDADE DO ESTADO DO RIO DE JANEIRO

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Fórmulas de Integração

u e v são funções ; c, a e n são constantes.

$$1) \int du = u + c$$

$$2) \int a du = a \int du$$

$$3) \int (du + dv) = \int du + \int dv$$

$$4) \int u^n du = \frac{u^{n+1}}{n+1} + c \quad (n \neq -1)$$

$$5) \int \frac{du}{u} = \ln|u| + c$$

$$6) \int a^u du = \frac{a^u}{\ln a} + c$$

$$7) \int e^u du = e^u + c$$

$$8) \int \cos u du = \sin u + c$$

$$9) \int \sin u du = -\cos u + c$$

$$10) \int \sec^2 u du = \operatorname{tg} u + c$$

$$11) \int \operatorname{cosec}^2 u du = -\operatorname{cotg} u + c$$

$$12) \int \sec u \cdot \operatorname{tg} u du = \sec u + c$$

$$13) \int \operatorname{cosec} u \cdot \operatorname{cotg} u du = -\operatorname{cosec} u + c$$

$$14) \int \frac{du}{\sqrt{a^2 - u^2}} = \operatorname{sen}^{-1} \frac{u}{a} + c$$

$$15) \int \frac{du}{a^2 + u^2} = \frac{1}{a} \cdot \operatorname{tg}^{-1} \frac{u}{a} + c$$

$$16) \int \frac{du}{u \cdot \sqrt{u^2 - a^2}} = \frac{1}{a} \cdot \operatorname{sec}^{-1} \frac{u}{a} + c$$

$$17) \int \sec u du = \ln|\sec u + \operatorname{tg} u| + c$$

$$18) \int \operatorname{cosec} u du = \ln|\operatorname{cosec} u - \operatorname{cotg} u| + c$$

$$19) \int \frac{du}{a^2 - u^2} = \frac{1}{2a} \cdot \ln \left| \frac{a+u}{a-u} \right| + c$$

$$20) \int \frac{du}{\sqrt{u^2 \pm a^2}} = \ln \left| u + \sqrt{u^2 \pm a^2} \right| + c$$