Primitivas Imediatas - Formulário

Considerando que $u : I \to \mathbb{R}$ é uma função real de variável real x derivável no intervalo I, que $a, k \in \mathbb{R}$ e que $\mathcal{C}$ é uma constante real arbitrária tem-se

$$\int a\,dx = ax + \mathcal{C} \qquad \int u'u^k\,dx = \frac{u^{k+1}}{k+1} + \mathcal{C} \ \ (k \neq -1)$$

$$\int \frac{u'}{u}\,dx = \ln|u| + \mathcal{C} \qquad \int u'a^u \ln a\,dx = a^u + \mathcal{C} \ \ (a \in \mathbb{R}^+ \setminus \{1\})$$

$$\int u'e^u\,dx = e^u + \mathcal{C}$$

$$\int -u'\operatorname{sen} u\,dx = \cos u + \mathcal{C} \qquad \int u'\cos u\,dx = \operatorname{sen} u + \mathcal{C}$$

$$\int \frac{u'}{\cos^2 u}\,dx = \operatorname{tg} u + \mathcal{C} \qquad \int \frac{-u'}{\operatorname{sen}^2 u}\,dx = \operatorname{cotg} u + \mathcal{C}$$

$$\int \frac{u'\operatorname{sen} u}{\cos^2 u}\,dx = \sec u + \mathcal{C} \qquad \int \frac{-u'\cos u}{\operatorname{sen}^2 u}\,dx = \operatorname{cosec} u + \mathcal{C}$$

$$\int \frac{u'}{\cos u}\,dx = \ln\left|\frac{1}{\cos u} + \operatorname{tg} u\right| + \mathcal{C} \qquad \int \frac{u'}{\sin u}\,dx = \ln\left|\frac{1}{\sin u} - \operatorname{cotg} u\right| + \mathcal{C}$$

$$\int \frac{-u'}{\sqrt{1-u^2}}\,dx = \arccos u + \mathcal{C} \qquad \int \frac{u'}{\sqrt{1-u^2}}\,dx = \operatorname{arcsen} u + \mathcal{C}$$

$$\int \frac{u'}{1+u^2}\,dx = \operatorname{arctg} u + \mathcal{C} \qquad \int \frac{-u'}{1+u^2}\,dx = \operatorname{arccotg} u + \mathcal{C}$$

$$\int u'\operatorname{sh} u\,dx = \operatorname{ch} u + \mathcal{C} \qquad \int u'\operatorname{ch} u\,dx = \operatorname{sh} u + \mathcal{C}$$

$$\int \frac{u'}{\operatorname{ch}^2 u}\,dx = \operatorname{th} u + \mathcal{C} \qquad \int \frac{-u'}{\operatorname{sh}^2 u}\,dx = \coth u + \mathcal{C}$$

$$\int \frac{-u'\operatorname{sh} u}{\operatorname{ch}^2 u}\,dx = \operatorname{sech} u \qquad \int \frac{-u'\operatorname{ch} u}{\operatorname{sh}^2 u}\,dx = \operatorname{cosech} u + \mathcal{C}$$

$$\int \frac{u'}{\sqrt{u^2+1}}\,dx = \operatorname{argsh} u + \mathcal{C} \qquad \int \frac{u'}{\sqrt{u^2-1}}\,dx = \operatorname{argch} u + \mathcal{C}$$

$$\int \frac{u'}{1-u^2}\,dx = \operatorname{argth} u + \mathcal{C} \qquad \int \frac{u'}{1-u^2}\,dx = \operatorname{argcoth} u + \mathcal{C}$$