

Derivadas

Função	Derivada
u ^r	$r u^{r-1} u'$
ln u	<u>u'</u> <u>u</u>
e ^u	u' e ^u
a ^u	$u' a^u \ln a \ (a > 0, a \neq 1)$
sen u	$u'\cos u$
cosu	-u' sen u
senh u	$u' \cosh u$
cosh u	u' senh u

Função	Derivada
tgu	$u' \sec^2 u$
cotgu	−u′ cosec² u
sec u	u' secu tgu
cosec u	-u' cosec u cotg u
arcsen u	$\frac{u'}{\sqrt{1-u^2}}$
arctg u	$\frac{u'}{1+u^2}$
arccos u	$-\frac{u'}{\sqrt{1-u^2}}$
arccotg u	$-\frac{u'}{1+u^2}$

Primitivas 2

Função	Primitiva
$u^r u'$	$\frac{u^{r+1}}{r+1} \ (r \neq -1)$
$\frac{u'}{u}$	$\ln u $
u' e ^u	e^u
u' a ^u	$\frac{a^u}{\ln a} \ (a > 0, a \neq 1)$
$u'\cos u$	sen u
u' sen u	$-\cos u$
$u' \cosh u$	senh u
u' senh u	cosh u

Função	Primitiva
u' sec² u	tg u
u' cosec² u	- cotg u
u' secu tgu	sec u
$u' \operatorname{cosec} u \operatorname{cotg} u$	-cosec u
$\frac{u'}{\sqrt{1-u^2}}$	arcsen u
$\frac{u'}{1+u^2}$	arctg u
u' sec u	$\ln \sec u + \operatorname{tg} u $
u' cosec u	$-\ln \csc u + \cot g u $

Primitivas quase imediatas: exercícios

$$a) \int x(1+x^2)^9 dx$$

a)
$$\int x(1+x^2)^9 dx$$
 b) $\int \operatorname{sen} x \cos^5 x dx$ c) $\int \frac{x^5}{1+x^6} dx$ d) $\int \operatorname{tg} x dx$

c)
$$\int \frac{x^5}{1+x^6} dx$$

d)
$$\int tg x dx$$

$$e) \int \frac{1}{1+4x^2} dx$$

e)
$$\int \frac{1}{1+4x^2} dx$$
 f) $\int e^{\operatorname{tg} x} \sec^2 x \, dx$ g) $\int x7^{x^2} dx$ h) $\int \operatorname{tg}^2 x \, dx$

g)
$$\int x7^{x^2} dx$$

h)
$$\int tg^2 x dx$$

i)
$$\int \frac{x}{x^2 + 9} \, dx$$

$$j) \int \frac{1}{x^2 + 9} dx$$

i)
$$\int \frac{x}{x^2 + 9} dx$$
 j) $\int \frac{1}{x^2 + 9} dx$ k) $\int \frac{1}{(x + 9)^2} dx$ l) $\int \frac{x^2}{x^2 + 9} dx$

1)
$$\int \frac{x^2}{x^2 + 9} dx$$

m)
$$\int x^3 \sqrt{1-x^4} \, dx$$
 n) $\int \frac{x^3}{\sqrt{1-x^4}} \, dx$ o) $\int \frac{3x}{\sqrt{1-x^4}} \, dx$ p) $\int \frac{e^x}{1+e^{2x}} \, dx$

n)
$$\int \frac{x^3}{\sqrt{1-x^4}} dx$$

o)
$$\int \frac{3x}{\sqrt{1-x^4}} dx$$

(c p)
$$\int \frac{e^x}{1 + e^{2x}} dx$$

q)
$$\int \frac{\ln x}{x} dx$$

q)
$$\int \frac{\ln x}{x} dx$$
 r) $\int \frac{5}{x \ln^3 x} dx$ s) $\int \frac{1}{x \ln x} dx$ t) $\int \frac{e^x}{1 + e^x} dx$

s)
$$\int \frac{1}{x \ln x} dx$$

$$t) \int \frac{e^x}{1 + e^x} \, dx$$

u)
$$\int \sin^3 x \cos^5 x \, dx$$
 v) $\int \frac{1}{\sec x - \cos x} \, dx$ w) $\int \frac{1}{\sqrt{x - x^2}} \, dx$ x) $\int \frac{1}{1 + e^x} \, dx$

$$(x) \int \frac{1}{\sec x - \cos x} \, dx$$

w)
$$\int \frac{1}{\sqrt{x-x^2}} dx$$

x)
$$\int \frac{1}{1+e^x} dx$$