$(c)' = 0$

$(x^n)' = n x^{n-1}$

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

$(\log_a x)' = \frac{1}{x \ln a}$

$(\ln x)' = \frac{1}{x}$

$(\sin x)' = \cos x$

$(\cos x)' = -\sin x$

$(\operatorname{tg} x)' = \frac{1}{\cos^2 x}$

$(\operatorname{ctg} x)' = \frac{-1}{\sin^2 x}$

$(\arcsin x)' = \frac{1}{\sqrt{1-x^2}}$

$(\arccos x)' = \frac{-1}{\sqrt{1-x^2}}$

$(\operatorname{arctg} x)' = \frac{1}{1+x^2}$

$(\operatorname{arcctg} x)' = \frac{-1}{1+x^2}$

$[c \cdot f(x)]' = c \cdot f'(x)$

$[f(x) + g(x)]' = f'(x) + g'(x)$

$[f(x) \cdot g(x)]' = f'(x) \cdot g(x) + g'(x) \cdot f(x)$

$\left[\frac{f(x)}{g(x)}\right]' = \frac{f'(x) \cdot g(x) - g'(x) \cdot f(x)}{g^2(x)}$

$x^{-n} = \frac{1}{x^n}$

$x^{\frac{m}{n}} = \sqrt[n]{x^m}$

$x^{-\frac{m}{n}} = \frac{1}{\sqrt[n]{x^m}}$

$\left[\frac{0}{0}\right], \left[\frac{\infty}{\infty}\right]$

$\left[\frac{0}{a}\right] = 0$

$\left[\frac{-a}{0^-}\right] = -\infty$

$\left[\frac{a}{0^-}\right] = -\infty$

$\left[\frac{-a}{0^+}\right] = -\infty$

$\left[\frac{a}{0^+}\right] = +\infty$

$\ln e = \cancel{0}1$

$\ln 1 = 0$

$\operatorname{tg} x = \frac{\sin x}{\cos x}$

$\operatorname{ctg} x = \frac{\cos x}{\sin x}$

$\sin^2 x + \cos^2 x = 1$

$e^{Ax} = Ae^x$

$\sin Ax = A \cos Ax$

$\square = e^{\ln \square}$

$4^g = e^{\ln 4^g} = e^{g \ln 4}$

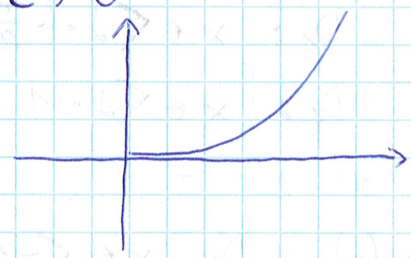
$(e^{Ax})' = Ae^{Ax}$

$(\sin Ax)' = A \cos Ax$ $\left[\frac{-a}{f(x)}\right]$

$(\cos Ax)' = -A \sin Ax$ $\lim_{x \to 0^-}$

$\frac{1}{\infty} = 0$

$e \neq 0$



log

$\int 0 \, dx = C$

$\int x^{a} \, dx = \frac{x^{a-1}}{a+1} + C \qquad a \neq -1$

$\int \frac{1}{x} \, dx = \ln|x| + C$

$\int a^{x} \, dx = \frac{a^{x}}{\ln a} + C$

$\int e^{x} \, dx = e^{x} + C$

$\int \sin x \, dx = -\cos x + C$

$\int \cos x \, dx = \sin x + C$

$\int \frac{dx}{\cos^2 x} = tg\, x + C$

$\int \frac{dx}{\sin^2 x} = -ctg\, x + C$

$\int \frac{dx}{1+x^2} = arc\, tg\, x + C$

$\int \frac{dx}{\sqrt{1-x^2}} = arc.\sin x + C$

$\int \frac{f'(x)}{f(x)} \, dx = \ln|f(x)| + C$

$\sin 2\square = 2\sin\square \cos\square$

$\cos 2\square = \cos^2\square - \sin^2\square =$

$= 2\cos^2\square - 1 =$

$= 1 - 2\sin^2\square$

$\sin^2\square + \cos^2\square = 1$

$tg\, x = \frac{\sin x}{\cos x}$

$ctg\, x = \frac{\cos x}{\sin x}$

$2\sin^2\square = 1 - \cos 2\square$

$x^{-n} = \frac{1}{x^{n}}$

$x^{\frac{m}{n}} = \sqrt[n]{x^{m}}$

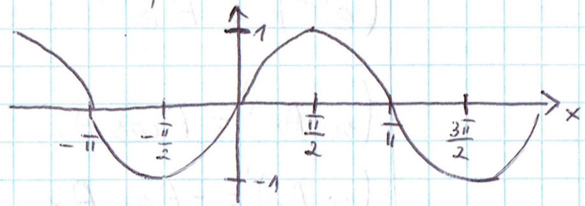
$\int \frac{f'(x)}{\sqrt{f(x)}} \, dx = 2\sqrt{f(x)} + C$

$\int c \cdot f(x) \, dx = c \int f(x) \, dx$

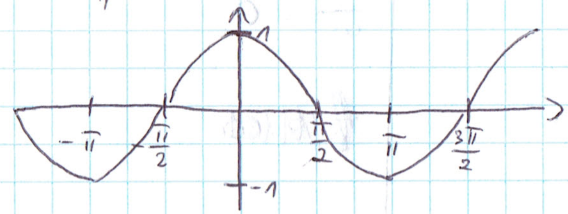
$\int \left(f(x) + g(x) \right) dx = \int f(x) \, dx + \int g(x) \, dx$

$\int 1 \, dx = x \iff \int dx = x$

- $\sin(x)$ $\quad D_f: x \in R$



- $\cos(x)$ $\quad D_f: x \in R$



- $tg(x)$ $\quad D_f: x \in \langle k \cdot (-\frac{\pi}{2}), k \cdot \frac{\pi}{2} \rangle \quad k \in 1 \ldots$
- $ctg(x)$ $\quad D_f: x \in \langle k \cdot 1, k \cdot \pi \rangle \quad k \in 1 \ldots$

- $arcsin(x)$ $\quad D_f: x \in \langle -1, 1 \rangle$
- $arccos(x)$ $\quad D_f: x \in \langle -1, 1 \rangle$
- $arctg(x)$ $\quad D_f: x \in R$
- $arcctg(x)$ $\quad D_f: x \in R$

- $\lim_{x \to x_0^+} f(x) = \pm\infty$

$A = \lim_{x \to \pm\infty} \left(f(x) \cdot \frac{1}{x} \right)$

$B = \lim_{x \to \pm\infty} \left(f(x) - Ax \right)$

$y - f(x_0) = f'(x_0)(x - x_0)$

$f(x_0 - \Delta x) = f(x_0) + f'(x_0) \cdot \Delta x$