

ΠΙΝΑΚΑΣ ΠΑΡΑΓΩΓΩΝ ΚΑΙ ΟΛΟΚΛΗΡΩΜΑΤΩΝ

ΠΙΝΑΚΑΣ ΠΑΡΑΓΩΓΩΝ		ΠΙΝΑΚΑΣ ΟΛΟΚΛΗΡΩΜΑΤΩΝ	
Απλή συνάρτηση $f(x)$	Σύνθετη συνάρτηση $f(g(x))$	Απλή συνάρτηση $f(x)$	Σύνθετη συνάρτηση $f(g(x))$
$(x)' = 1, (A)' = 0$ $A \in \mathbb{R}$	$[Af(x)]' = Af'(x)$	$\int dx = x + c$	$\int Af(x)dx = A \int f(x)dx$
$(x^\alpha)' = \alpha x^{\alpha-1}, \alpha \in \mathbb{R}$	$[f^\alpha(x)]' = \alpha [f(x)]^{\alpha-1} \cdot f'(x)$	$\int x^\alpha dx = \frac{x^{\alpha+1}}{\alpha+1} + c \quad \alpha \neq -1$	$\int f^\alpha(x) f'(x) dx = \frac{f^{\alpha+1}(x)}{\alpha+1} + c$
$(\sqrt{x})' = \frac{1}{2\sqrt{x}} \quad x > 0$	$[\sqrt{f(x)}]' = \frac{1}{2\sqrt{f(x)}} \cdot f'(x)$	$\int \frac{1}{\sqrt{x}} dx = 2\sqrt{x} + c$	$\int \frac{f'(x)}{\sqrt{f(x)}} dx = 2\sqrt{f(x)} + c$
$(\frac{1}{x})' = (x^{-1})' = -\frac{1}{x^2}$	$(\frac{1}{f(x)})' = -\frac{1}{f^2(x)} \cdot f'(x)$	$\int \frac{1}{x^2} dx = -\frac{1}{x} + c$	$\int \frac{f'(x)}{f^2(x)} dx = -\frac{1}{f(x)} + c$
$(e^x)' = e^x$	$[e^{f(x)}]' = e^{f(x)} f'(x)$	$\int e^x dx = e^x + c$	$\int e^{f(x)} f'(x) dx = e^{f(x)} + c$
$(\alpha^x)' = \alpha^x \cdot \ln \alpha$ $0 < \alpha \neq 1$	$[\alpha^{f(x)}]' = \alpha^{f(x)} f'(x) \ln \alpha$	$\int \alpha^x dx = \frac{\alpha^x}{\ln \alpha} + c$	$\int \alpha^{f(x)} f'(x) dx = \frac{\alpha^{f(x)}}{\ln \alpha} + c$
$(\ln x)' = \frac{1}{x} \quad x > 0$	$[\ln f(x)]' = \frac{1}{f(x)} f'(x)$	$\int \frac{1}{x} dx = \ln x + c$	$\int \frac{f'(x)}{f(x)} dx = \ln f(x) + c$
$(\eta\mu x)' = \sigma\upsilon\nu x$	$[\eta\mu f(x)]' = \sigma\upsilon\nu f(x) \cdot f'(x)$	$\int \sigma\upsilon\nu x dx = \eta\mu x + c$	$\int f'(x) \sigma\upsilon\nu f(x) dx = \eta\mu f(x) + c$
$(\sigma\upsilon\nu x)' = -\eta\mu x$	$[\sigma\upsilon\nu f(x)]' = -\eta\mu f(x) \cdot f'(x)$	$\int \eta\mu x dx = -\sigma\upsilon\nu x + c$	$\int f'(x) \eta\mu x dx = -\sigma\upsilon\nu f(x) + c$
$(\epsilon\phi x)' = \frac{1}{\sigma\upsilon\nu^2 x}$	$[\epsilon\phi f(x)]' = \frac{1}{\sigma\upsilon\nu^2 f(x)} f'(x)$	$\int \frac{1}{\sigma\upsilon\nu^2 x} dx = \epsilon\phi x + c$	$\int \frac{f'(x)}{\sigma\upsilon\nu^2 f(x)} dx = \epsilon\phi f(x) + c$
$(\sigma\phi x)' = -\frac{1}{\eta\mu^2 x}$	$[\sigma\phi f(x)]' = -\frac{1}{\eta\mu^2 f(x)} f'(x)$	$\int \frac{1}{\eta\mu^2 x} dx = -\sigma\phi x + c$	$\int \frac{f'(x)}{\eta\mu^2 f(x)} dx = -\sigma\phi f(x) + c$
$(\tau\omicron\xi\eta\mu x)' = \frac{1}{\sqrt{1-x^2}}$	$[\tau\omicron\xi\eta\mu f(x)]' = \frac{1}{\sqrt{1-f^2(x)}} f'(x)$	$\int \frac{1}{\sqrt{1-x^2}} dx = \tau\omicron\xi\eta\mu x + c$	$\int \frac{f'(x)}{\sqrt{1-f^2(x)}} dx = \tau\omicron\xi\eta\mu f(x) + c$
$(\tau\omicron\xi\sigma\upsilon\nu x)' = -\frac{1}{\sqrt{1-x^2}}$	$[\tau\omicron\xi\sigma\upsilon\nu f(x)]' = -\frac{1}{\sqrt{1-f^2(x)}} f'(x)$	$\int \frac{1}{\sqrt{1-x^2}} dx = -\tau\omicron\xi\sigma\upsilon\nu x + c$	$\int \frac{f'(x)}{\sqrt{1-f^2(x)}} dx = -\tau\omicron\xi\sigma\upsilon\nu f(x) + c$
$(\tau\omicron\xi\epsilon\phi x)' = \frac{1}{1+x^2}$	$[\tau\omicron\xi\epsilon\phi f(x)]' = \frac{1}{1+f^2(x)} f'(x)$	$\int \frac{1}{x^2+1} dx = \tau\omicron\xi\epsilon\phi x + c$	$\int \frac{f'(x)}{1+f^2(x)} dx = \tau\omicron\xi\epsilon\phi f(x) + c$
$\int \frac{du}{u^2 + \delta^2} dx = \frac{1}{\delta} \tau\omicron\xi\epsilon\phi \frac{u}{\delta} + c$		$\int \epsilon\phi x dx = -\ln \sigma\upsilon\nu x + c$ $\int \sigma\phi x dx = \ln \eta\mu x + c$ $\int \frac{1}{x \ln \alpha} dx = \log_\alpha x + c, x \neq 0, \alpha \in \mathbb{R}^+ - \{1\}$	
$\int \frac{dx}{\sqrt{x^2 + \alpha}} = \ln x + \sqrt{x^2 + \alpha} + c$ $\int \frac{1}{x^2 - \alpha^2} dx = \frac{1}{2\alpha} \ln \left \frac{x - \alpha}{x + \alpha} \right + c$ $\int \frac{1}{(\alpha^2 + x^2)^{3/2}} dx = \frac{1}{\alpha} \eta\mu \left[\tau\omicron\xi\epsilon\phi \frac{x}{\alpha} \right] + c$ $\int \sqrt{\alpha^2 - x^2} dx = \frac{x}{\alpha} \sqrt{\alpha^2 - x^2} + \frac{\alpha^2}{2} \tau\omicron\xi\eta\mu \frac{x}{\alpha} + c$ $\int \sqrt{x^2 + \alpha^2} dx = \frac{x}{2} \sqrt{x^2 + \alpha^2} + \frac{\alpha^2}{2} \ln(x + \sqrt{x^2 + \alpha^2}) + c$			