

Συγκεντρωτικός πίνακας – Παράγωγοι βασικών συναρτήσεων

Συνάρτηση f	Παράγωγος f'
$f(x) = c, x \in \mathbb{R}, c \in \mathbb{R}$	$f'(x) = (c)' = 0, x \in \mathbb{R}$
$f(x) = x, x \in \mathbb{R}$	$f'(x) = (x)' = 1, x \in \mathbb{R}$
$f(x) = x^k, k \in \mathbb{Z} - \{0, 1\}$ $x \in \mathbb{R}, \text{αν } k \in \mathbb{N} - \{0, 1\} \text{ και}$ $x \in \mathbb{R}^*, \text{αν } k \text{ αρνητικός ακέραιος}$	$f'(x) = (x^k)' = kx^{k-1}, k \in \mathbb{Z} - \{0, 1\}$ $x \in \mathbb{R}, \text{αν } k \in \mathbb{N} - \{0, 1\} \text{ και}$ $x \in \mathbb{R}^*, \text{αν } k \text{ αρνητικός ακέραιος}$
$f(x) = \sqrt{x}, x \in [0, +\infty)$	$f'(x) = (\sqrt{x})' = \frac{1}{2\sqrt{x}}, x \in (0, +\infty)$
$f(x) = \frac{1}{x}, x \in \mathbb{R}^*$	$f'(x) = \left(\frac{1}{x}\right)' = -\frac{1}{x^2}, x \in \mathbb{R}^*$
$f(x) = \eta\mu x, x \in \mathbb{R}$	$f'(x) = (\eta\mu x)' = \sigma\upsilon\nu x, x \in \mathbb{R}$
$f(x) = \sigma\upsilon\nu x, x \in \mathbb{R}$	$f'(x) = (\sigma\upsilon\nu x)' = -\eta\mu x, x \in \mathbb{R}$
$f(x) = \varepsilon\varphi x, x \in \mathbb{R} - \{x/\sigma\upsilon\nu x = 0\}$	$f'(x) = (\varepsilon\varphi x)' = \frac{1}{\sigma\upsilon\nu^2 x}, x \in \mathbb{R} - \{x/\sigma\upsilon\nu x = 0\}$
$f(x) = \sigma\varphi x, x \in \mathbb{R} - \{x/\eta\mu x = 0\}$	$f'(x) = (\sigma\varphi x)' = -\frac{1}{\eta\mu^2 x}, x \in \mathbb{R} - \{x/\eta\mu x = 0\}$
$f(x) = e^x, x \in \mathbb{R}$	$f'(x) = (e^x)' = e^x, x \in \mathbb{R}$
$f(x) = \ln x, x \in (0, +\infty)$	$f'(x) = (\ln x)' = \frac{1}{x}, x \in (0, +\infty)$

Κανόνες παραγώγισης

$$(f(x) \pm g(x))' = f'(x) \pm g'(x)$$

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

$$(f(x)g(x)h(x))' = f'(x)g(x)h(x) + f(x)g'(x)h(x) + f(x)g(x)h'(x)$$

$$(cf(x))' = cf'(x), c \in \mathbb{R}$$

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