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REGLAS DE DERIVACIÓN

1.- y = k y' = 0

2.- y = k·x y' = k

3.- $y = k[f(x)]^n$ $y' = k\cdot n\cdot[f(x)]^{n-1}\cdot f'(x)$

4.- $y = k^{f(x)}$ $y' = f'(x)\cdot k^{f(x)}\cdot \mathrm{Ln}\, k$

5.- $y = \lg_a f(x)$ $y' = \dfrac{f'(x)}{f(x)}\cdot \lg_a e$

(4 y 5) Ln e =1

6.- $y = \cdot[f(x)]^{g(x)}$ $y' = [g'(x)\cdot \mathrm{Ln}\, f(x) + (\mathrm{Ln}\, f(x))'\cdot g(x)]\cdot y$

7.- $y = f(x) \pm g(x)$ $y' = f'(x) \pm g'(x)$

8.- $y = f(x)\cdot g(x)$ $y' = f'(x)\cdot g(x) + g'(x)\cdot f(x)$

9.- $y = \dfrac{f(x)}{g(x)}$ $y' = \dfrac{f'(x)\cdot g(x) - g'(x)\cdot f(x)}{[g(x)]^2}$

10.- $y = \sqrt[n]{f(x)}$ $y' = \dfrac{f'(x)}{n\cdot\sqrt[n]{(f(x))^{n-1}}}$

11.- $y = \mathrm{sen}\, f(x)$ $y' = f'(x)\cdot\cos f(x)$

12.- $y = \cos f(x)$ $y' = -f'(x)\cdot \mathrm{sen}\, f(x)$

13.- $y = \mathrm{tg}\, f(x)$ $y' = \dfrac{f'(x)}{\cos^2 f(x)} = f'(x)\cdot(1+\mathrm{tg}^2 f(x)) = f'(x)\cdot \sec^2 f(x)$

14.- $y = \mathrm{cotg}\, f(x)$ $y' = -\dfrac{f'(x)}{\mathrm{sen}^2 f(x)} = -f'(x)\,(1+\mathrm{cotg}^2 f(x)) = -f'(x)\cdot \mathrm{cosec}^2 f(x)$

15.- $y = \sec f(x)$ $y' = f'(x)\cdot\sec f(x)\cdot \mathrm{tg}\, f(x)$

16.- $y = \mathrm{cosec}\, f(x)$ $y' = -f'(x)\cdot\mathrm{cosec}\, f(x)\cdot\mathrm{cotg}\, f(x)$

17.- y = arcsen f(x) $y' = \dfrac{f'(x)}{\sqrt{1-(f(x))^2}}$

18.- y = arccos f(x) $y' = \dfrac{-f'(x)}{\sqrt{1-(f(x))^2}}$

19.- y = arctg f(x) $y' = \dfrac{f'(x)}{1+(f(x))^2}$

20.- y = arccotg f(x) $y' = \dfrac{-f(x)}{1+(f(x))^2}$

21.- y = (f^{ón}.trig.)^n f(x) = [f^{ón}.trig. f(x)]^n ...y' = regla 3 (Igual si es f^{ón} logaritmo)

RECUERDA

$$\sqrt[n]{(f(x))^p} = (f(x))^{p/n}$$

$$\log(f(x))^n = n\log(f(x))$$

$$\log\left(\frac{f(x)}{g(x)}\right) = \log f(x) - \log g(x)$$

$$\log(f(x)\cdot g(x)) = \log f(x) + \log g(x)$$

$$\lg_a e = \frac{1}{Lna}$$

$$\lg_{f(x)} g(x) = \frac{Lng(x)}{Lnf(x)}$$