TAREA 5. DERIVADAS CON FÓRMULAS

1) $\frac{d}{dx}\left(6x^3 - 2x^4 + 7x^5\right)$

2) $\frac{d}{dx}\left(\frac{1}{5}x^5 - \frac{3x^4}{2} + 9\right)$

3) $\frac{d}{dx}\left(\frac{2}{3x} + \frac{4}{x^2}\right)$

4) $simplify\left(\frac{d}{dx}\left(x^3\left(4x^2 - 6x\right)\right)\right)$

5) $simplify\left(\frac{d}{dx}\left(\frac{4x^3 - 6x^6}{2x^3}\right)\right)$

6) $simplify\left(\frac{d}{dx}\left(\left(9 + 4x\right)\left(9 - 4x\right)\right)\right)$

7) $simplify\left(\frac{d}{dx}\left(\frac{x^6 - 4x^2 - 3}{6}\right)\right)$

8) $simplify\left(\frac{d}{dx}\left(\left(x^2 - 1\right)^2\right)\right)$

9) $simplify\left(\frac{d}{dx}\left(\frac{10}{x^2 + 1}\right)\right)$

10) $\frac{d}{dx}\left(\sin(x)\cos(x)\right)$

11) $\frac{d}{dx}\left(\frac{2 + \sec(x)}{x}\right)$

12) $\frac{d}{dx}\left(\left(4x^2 - 3x\right)^{10}\right)$

13) $simplify\left(\frac{d}{dx}\left(x\left(x - 1\right)^{-3}\right)\right)$

14) $\frac{d}{dx}\left(\left(1 + \cos(x)\right)^2\right)$

15) $\frac{d}{dx}\left(\sin\left(\left(4x\right)^4\right)\right)$

16) $\frac{d}{dx}\left(\sin^4(4x)\right)$

17) $\frac{d}{dx}\left(\sec\left(\frac{1}{x}\right)\right)$

18) $\frac{d}{dx}\left(\sin(5x) - 10\cos(2x)\right)$

19) $\frac{d}{dx}\left(\frac{\sin(5x)}{\cos(6x)}\right)$

20) $\frac{d}{dx}\left(\cos\left(2x^2\right)\cos(3x)\right)$

21) $\frac{d}{dx}\sqrt{\cos(\sin(x))}$

22) $\frac{d}{dx}\left(e^{\cos\left(x^2\right)}\right)$

23) $\frac{d}{dx}\left(2^{\cos^2(x)}\right)$

24) $\frac{d}{dx}\left(\ln\left(5x^2 + 5x\right)\right)$

25) $\frac{d}{dx}\left(\ln\left(\sqrt{x\cos(x)}\right)\right)$

26) $\frac{d}{dx}\left(\arctan\left(x^2\right)\right)$

27) $\frac{d}{dx}\left(\arcsin\left(e^x\right)\right)$

28) $\frac{d}{dx}\left(\arcsin(\ln(\cos(2x)))\right)$

29) $\frac{d}{dx}\left(\ln(\arctan(x))\right)$

30) $\frac{d}{dx}\tan(\arctan(x))$

Respuestas

$18x^2 - 8x^3 + 35x^4$

$x^4 - 6x^3$

$-\frac{2}{3x^2} - \frac{8}{x^3}$

$20x^4 - 24x^3$

$-9x^2$

$-32x$

$x^5 - \frac{4}{3}x$

$4\left(x^2 - 1\right)x$

$-\frac{20x}{\left(x^2 + 1\right)^2}$

$\cos(x)^2 - \sin(x)^2$

$\frac{\sec(x)\tan(x)}{x} - \frac{2 + \sec(x)}{x^2}$

$10\left(4x^2 - 3x\right)^9\left(8x - 3\right)$

$-\frac{2x + 1}{(x - 1)^4}$

$-2\left(1 + \cos(x)\right)\sin(x)$

$1024\cos\left(256x^4\right)x^3$

$16\sin(4x)^3\cos(4x)$

$-\frac{\sec\left(\frac{1}{x}\right)\tan\left(\frac{1}{x}\right)}{x^2}$

$5\cos(5x) + 20\sin(2x)$

$\frac{5\cos(5x)}{\cos(6x)} + \frac{6\sin(5x)\sin(6x)}{\cos(6x)^2}$

$-4\sin\left(2x^2\right)x\cos(3x) - 3\cos\left(2x^2\right)\sin(3x)$

$-\frac{1}{2}\frac{\sin(\sin(x))\cos(x)}{\sqrt{\cos(\sin(x))}}$

$-2\sin\left(x^2\right)x\,e^{\cos\left(x^2\right)}$

$-2\,2^{\cos(x)^2}\cos(x)\sin(x)\ln(2)$

$\frac{10x + 5}{5x^2 + 5x}$

$\frac{1}{2}\frac{\cos(x) - x\sin(x)}{x\cos(x)}$

$\frac{2x}{1 + x^4}$

$\frac{e^x}{\sqrt{1 - \left(e^x\right)^2}}$

$-\frac{2\sin(2x)}{\cos(2x)\sqrt{1 - \ln(\cos(2x))^2}}$

$\frac{1}{\left(1 + x^2\right)\arctan(x)}$