DERIVADAS

Cálculo

HOJA 1

1 $y = x^5 - 4x^3 + 2$

2 $y = ax^6 \ \ (a = cte)$

3 $y = 3x^{\frac{2}{3}} - 2x^{\frac{5}{2}} + x^{-3}$

4 $y = \dfrac{5}{x^2} - \dfrac{1}{3x}$

5 $y = -\dfrac{4x^2}{3}$

6 $y = \dfrac{2+3x}{2-3x}$

7 $y = \dfrac{2x+3}{x^2-5x+5}$

8 $y = \dfrac{2}{2x-1} - \dfrac{1}{x}$

9 $y = \dfrac{1+\sqrt{x}}{1-\sqrt{x}}$

10 $y = 5\sin x + 3\cos x$

11 $y = \dfrac{\sin x + \cos x}{\sin x - \cos x}$

12 $y = x^7\, e^x$

13 $y = x^6 + e^x$

22 $y = \left(\dfrac{5x+4}{3}\right)^2$

23 $y = (2a + 3bx^2)^5 \ \ (a, b = ctes)$

24 $y = \dfrac{3}{5(2x-1)^3} - \dfrac{2}{(2x-1)^2}$

25 $y = \sqrt{1-x^2}$

26 $y = \sqrt[3]{3+x^2}$

27 $y = \sin^5 x$

28 $y = \cos 3x$

29 $y = tgx - \dfrac{1}{3}tg^3 x$

30 $y = -\dfrac{1}{6(1-3\cos x)^2}$

31 $y = \dfrac{1}{3\sin^2 x} - \dfrac{1}{\sin x}$

32 $y = \sqrt{xe^x + x}$

33 $y = \sin 3x + \cos\dfrac{x}{5} + tg\sqrt{x}$

34 $y = \sin(x^2 + 3x) + tg\dfrac{x}{2}$

14 $y = \dfrac{e^x}{x^3}$

15 $y = \mathrm{e}^x \cos x$

16 $y = (x^2 - 2x + 2)\,\mathrm{e}^x$

17 $y = x^3 \ln x - \dfrac{x^3}{3}$

18 $y = \dfrac{x^2}{\ln x}$

19 $y = \dfrac{1}{x} + 2\ln x - \dfrac{\ln x}{x}$

20 $y = 45$

21 $y = (1 + 3x - 5x^2)^{30}$

35 $y = \dfrac{1 + \cos 2x}{1 - \cos 2x}$

36 $y = 5e^{-x^2}$

37 $y = \ln(\cos x)$

38 $y = \ln(tg\,\dfrac{x}{2})$

39 $y = \dfrac{\sqrt{2x^2 - 2x + 1}}{x}$

40 $y = \sqrt{\dfrac{x-1}{x+1}}$

41 $y = \ln^2 x - \ln(\ln x)$

42 $y = \dfrac{x}{2}\sqrt{x^2 - 9} - \dfrac{9}{2}\ln(x + \sqrt{x^2 - 9})$

DERIVADAS — Soluciones

HOJA 1

1 $y' = 5x^4 - 12x^2$

2 $y' = 6ax^5$

3 $y' = 3x^{\frac{1}{3}} - 5x^{\frac{3}{2}} - 3x^{-4}$

4 $y' = -\frac{10}{x^3} + \frac{1}{3x^2}$

5 $y' = -\frac{8x}{3}$

6 $y' = \frac{12}{(2-3x)^2}$

7 $y' = \frac{-2x^2 - 6x + 25}{(x^2 - 5x + 5)^2}$

8 $y' = \frac{-4}{(2x-1)^2} + \frac{1}{x^2}$

9 $y' = \frac{1}{\sqrt{x}(1-\sqrt{x})^2}$

10 $y' = 5\cos x - 3\sin x$

11 $y' = \frac{-2}{(\sin x - \cos x)^2}$

12 $y' = (7x^6 + x^7)\,e^x$

13 $y' = 6x^5 + e^x$

16 $y' = e^x\, x^2$

17 $y' = 3x^2 \ln x$

18 $y' = \frac{x(2\ln x - 1)}{(\ln x)^2}$

19 $y' = -\frac{2}{x^2} + \frac{2}{x} + \frac{\ln x}{x^2}$

20 $y' = 0$

21 $y' = 30(1 + 3x - 5x^2)^{29}(3 - 10x)$

22 $y' = 4\left(\frac{5x+4}{3}\right)^3 \frac{5}{3}$

23 $y' = 5(2a + 3bx^2)^4\ 6bx$

24 $y' = -\frac{18}{5(2x-1)^4} - \frac{8}{(2x-1)^3}$

25 $y' = \frac{-x}{\sqrt{1-x^2}}$

26 $y' = \frac{2x}{3\sqrt[3]{(3+x^2)^2}}$

27 $y' = 5\sin^4 x \cos x$

28 $y' = -3\sin 3x$

14 $y' = \dfrac{e^x(x-3)}{x^4}$

15 $y' = \mathrm{e}^x(\cos x - \sin x)$

29 $y' = \dfrac{1}{\cos^2 x} - tg^2 x \cdot \dfrac{1}{\cos^2 x}$

30 $y' = \dfrac{\sin x}{(1-3\cos x)^3}$