

## TAREA 4 – 3

Derivar las siguientes funciones usando las formulas 8 a 12 del formulario.

### PROBLEMA

1.  $y = \ln(ax+b)$
3.  $y = \ln(ax+b)^2$
5.  $y = \ln x^3$
7.  $y = \ln(2x^3 - 3x^2 + 4)$
9.  $y = \ln \frac{x^2}{1+x^2}$
11.  $y = \ln(ax\sqrt{a+x})$
13.  $f(x) = \ln(x + \sqrt{1+x^2})$
15.  $f(x) = x^2 \ln x^2$
17.  $y = 10^{ax}$
19.  $y = \frac{2}{e^x}$
21.  $z = b^{2y}$
23.  $v = \frac{e^u}{u}$
25.  $y = \ln(x^2 e^x)$
27.  $y = x^2 e^{-x}$
29.  $y = \frac{e^x - e^{-x}}{e^x + e^{-x}}$
31.  $f(x) = \ln \frac{\sqrt{x^2+1} - x}{\sqrt{x^2+1} + x}$
33.  $y = x^{\sqrt{x}}$
35.  $y = \frac{x\sqrt[3]{3x+a}}{\sqrt{2x+b}}$
37.  $y = x^n (a+bx)^m$

**Sugerencia:** En primer lugar hacer racional el denominador.

### PROBLEMA

2.  $y = \ln(ax^2 + b)$
4.  $y = \ln ax^n$
6.  $y = \ln^3 x$  Donde:  $[\ln^3 x = (\ln x)^3]$
8.  $y = \log \frac{2}{x}$
10.  $y = \ln \sqrt{9-2x^2}$
12.  $f(x) = x \ln x$
14.  $s = \ln \sqrt{\frac{a+bt}{a-bt}}$
16.  $y = e^{ax}$
18.  $y = e^{x^2}$
20.  $s = e^{\sqrt{t}}$
22.  $u = se^s$
24.  $y = \frac{\ln x}{x}$
26.  $y = \frac{e^x - 1}{e^x + 1}$
28.  $y = \frac{a}{2} (e^{x/a} - e^{-x/a})$
30.  $s = \frac{\ln t^2}{t^2}$
32.  $y = x^x$
34.  $s = \left(\frac{a}{t}\right)^t$
36.  $y = \frac{\sqrt{4+x^2}}{x\sqrt{4-x^2}}$