02 - Regras básicas de Derivação.

1. $y = x^2 + 2x + 1$

$y' = 2x + 2$

2. $y = \sin(x) + 3x^2 + e^x$

$y' = \cos(x) + 6x + e^x$

3. $y = 6x^7 + 0{,}02x^3 + \ln(x) + e^x + \cos(x)$

$y = 42x^6 + 0{,}06x^2 + \frac{1}{x} + e^x - \sin(x)$

4. $y = \tan(x)$

$y' = \sec^2 x$

5. $y = x\ln(x)$

$y' = (1)\ln(x) + x \cdot \frac{1}{x}$

$y' = \ln(x) + 1$

6. $y = \frac{\overbrace{[e^x \ln(x)]}^{f}}{\underbrace{x}_{g}}$

Obs:

$f'(x) = e^x \ln(x) + \frac{e^x}{x}$; $g'(x) = 1$

$$\Rightarrow y' = \frac{\left(e^x \ln(x) + \frac{e^x}{x}\right)x - e^x \ln(x)(1)}{x^2}$$

7. $y = (x^2 + 1)\sin(x)$

$y' = (2x)\sin(x) + (x^2+1)\cos(x)$