

**MAT01109 : FÓRMULAS ÚTEIS**  
**23/06/2019**

$$(x + y)^n = \sum_{i=0}^n \binom{n}{i} x^i y^{n-i}$$

$$e^{x+y} = e^x e^y$$

$$e^{xy} = (e^x)^y$$

$$\log(xy) = \log(x) + \log(y)$$

$$\log(x^y) = y \log(x)$$

$$\sin(x + y) = \sin(x) \cos(y) + \sin(y) \cos(x)$$

$$\cos(x + y) = \cos(x) \cos(y) - \sin(x) \sin(y)$$

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

$$(f + g)'(x) = f'(x) + g'(x)$$

$$(fg)'(x) = f'(x)g(x) + f(x)g'(x)$$

$$(f \circ g)'(x) = f'(g(x))g'(x)$$

$$(e^x)' = e^x$$

$$(\sin(x))' = \cos(x)$$

$$(\cos(x))' = -\sin(x)$$

$$(x^a)' = ax^{a-1}.$$