

Fundamentos de Cálculo Aplicado

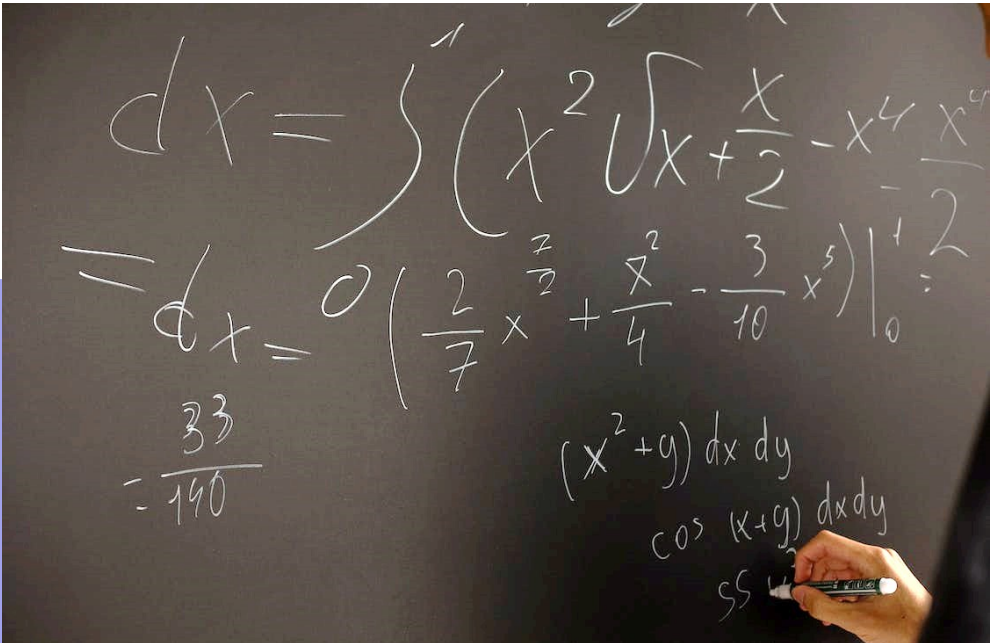
Fundamentos gerais sobre
limites e derivadas

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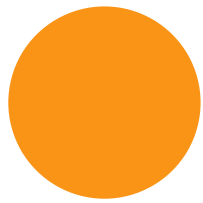


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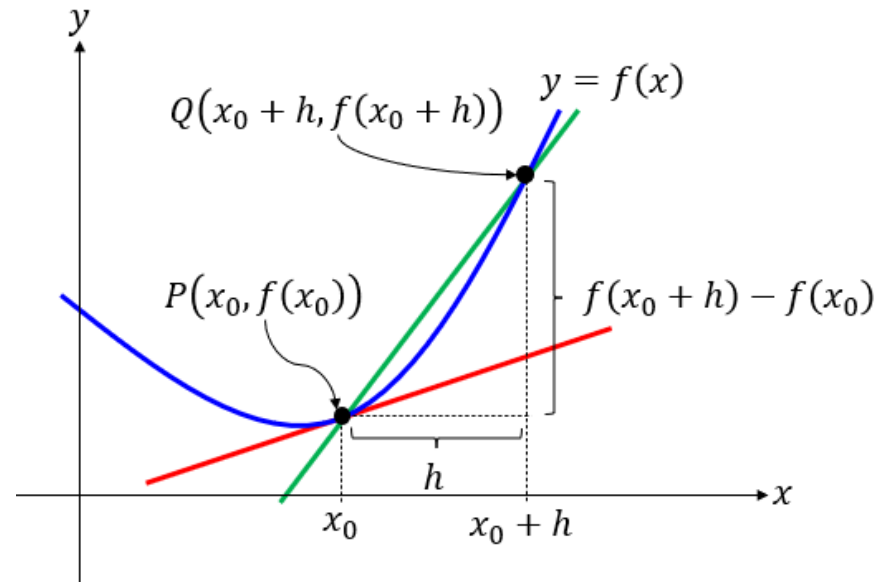
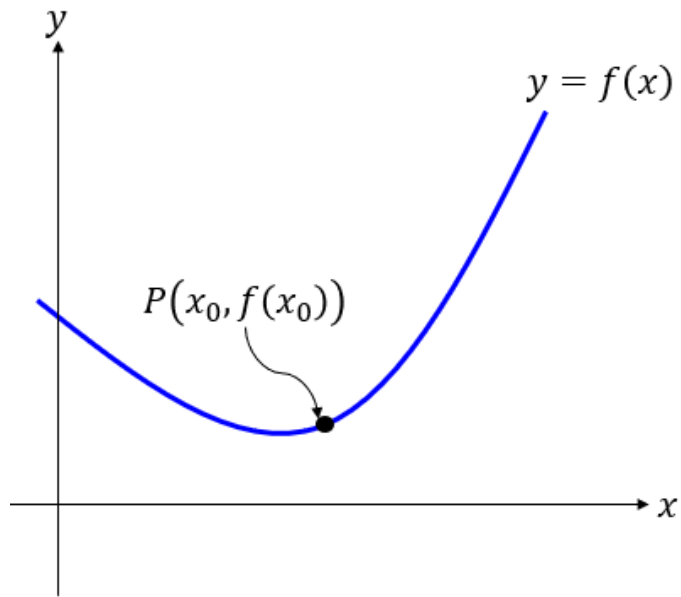
Introdução às derivadas

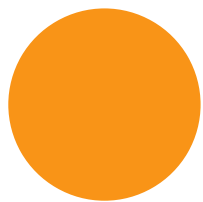


The image shows a chalkboard with handwritten mathematical work. The top line shows the derivative of a function:
$$dx = \int \left(x^2 \sqrt{x} + \frac{x}{2} - x^4 \frac{x^4}{2} \right)$$
 The second line shows the result of the integration:
$$= dx = \left(\frac{2}{7} x^{\frac{7}{2}} + \frac{x^2}{4} - \frac{3}{10} x^5 \right) \Big|_0^2$$
 The third line shows the final result:
$$= \frac{33}{140}$$
 The bottom right shows the partial derivative of a function:
$$\frac{\partial}{\partial x} (x^2 + y) = 2x$$
 A hand is visible on the right side of the chalkboard, holding a piece of chalk.



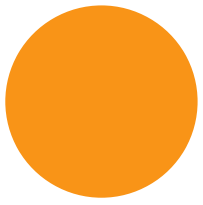
O problema da reta tangente





Taxa de variação





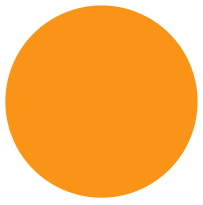
Derivada no ponto

Dada uma função f e um número, a derivada de f em a é dada por:

se o limite existir.

Forma equivalente:

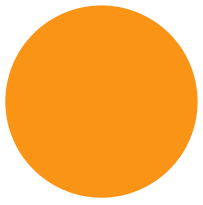




Derivada como função

Dada uma função f , a derivada de f é dada por:
se o limite existir.

Derivadas de ordem superior
Exemplo:



Regras de derivação

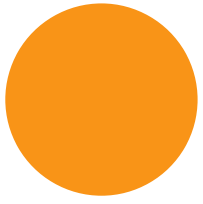
Derivada de
função constante:

Derivada de
potência:

Derivada da soma ou
diferença de funções:

Derivada da multiplicação
entre função e constante:





Exemplo:

