

Fundamentos de Cálculo Aplicado

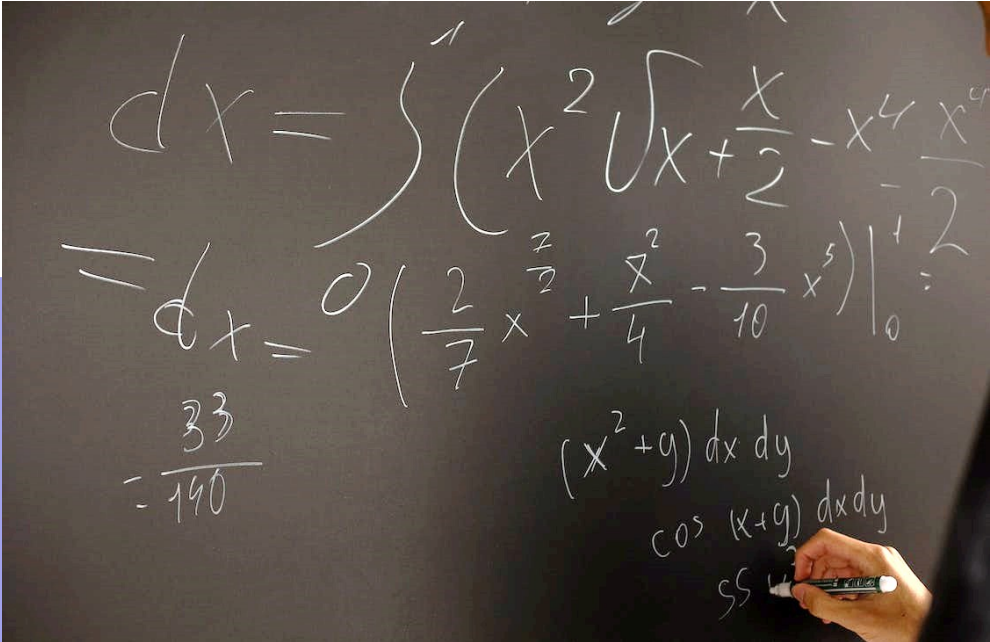
Fundamentos gerais sobre
limites e derivadas

Profa. Ma. Alessandra Negrini



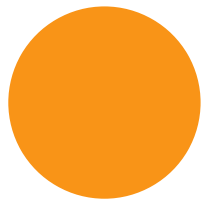
0
3

Continuidade de funções



The image shows a chalkboard with handwritten mathematical work. The top part shows the integration of $x^2 \sqrt{x} + \frac{x}{2} - x^4 \frac{x^4}{2}$ to find dx . The middle part shows the evaluation of the integral from 0 to 2, resulting in $\frac{33}{140}$. The bottom part shows the integration of $(x^2 + y) dx dy$ and $\cos(x+y) dx dy$ over a region.

$$dx = \int \left(x^2 \sqrt{x} + \frac{x}{2} - x^4 \frac{x^4}{2} \right)$$
$$= dx = 0 \left(\frac{2}{7} x^{\frac{7}{2}} + \frac{x^2}{4} - \frac{3}{10} x^5 \right) \Big|_0^2 = \frac{33}{140}$$
$$(x^2 + y) dx dy$$
$$\cos(x+y) dx dy$$
$$\iint$$

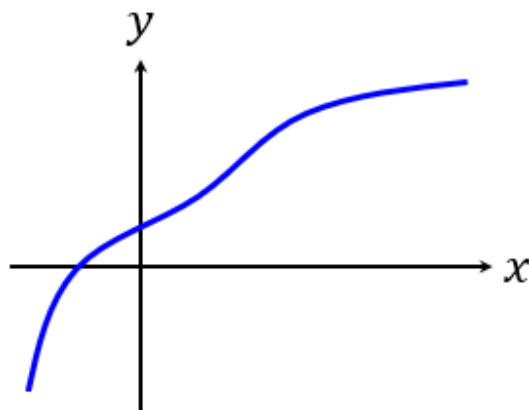


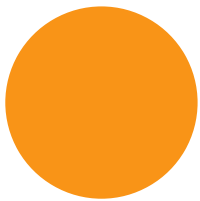
Função contínua

Uma função é **contínua em** se:

- está definida (isto é, está no domínio de)
- existe

A função será descontínua se uma das condições não foi verificada.



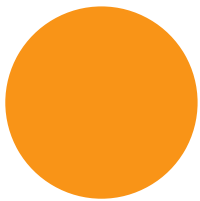


Exemplo:

Dada a função:

verifique se é contínua em .



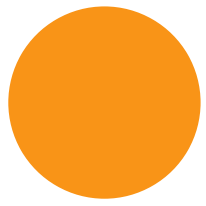


Exemplo:

Dada a função:

verifique se é contínua em seu domínio.

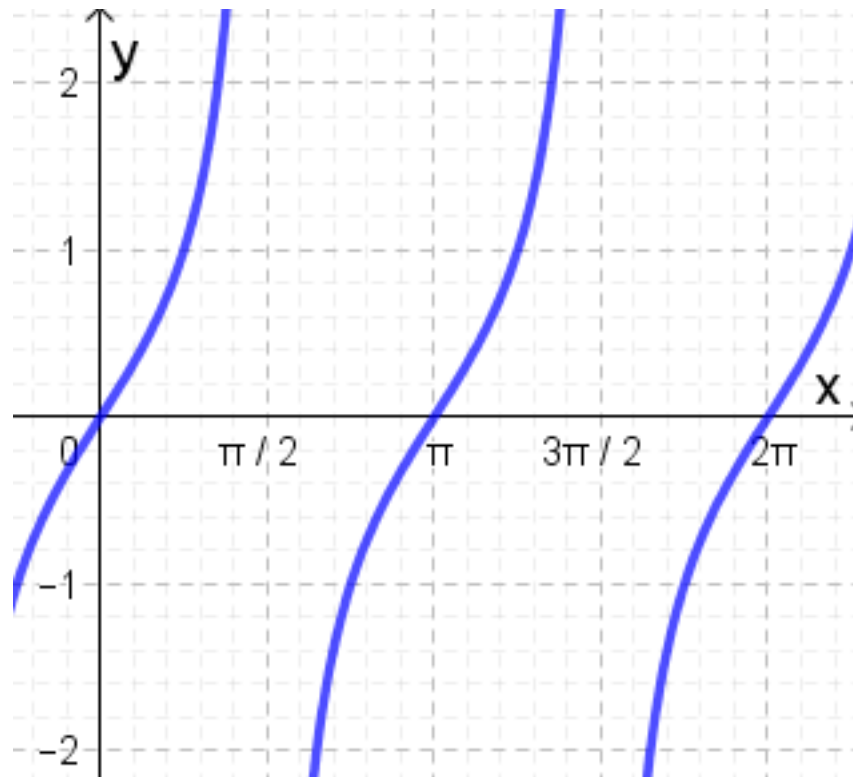


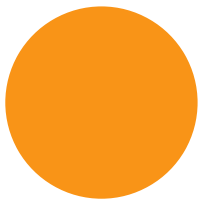


Tipos de descontinuidades

Descontinuidade infinita

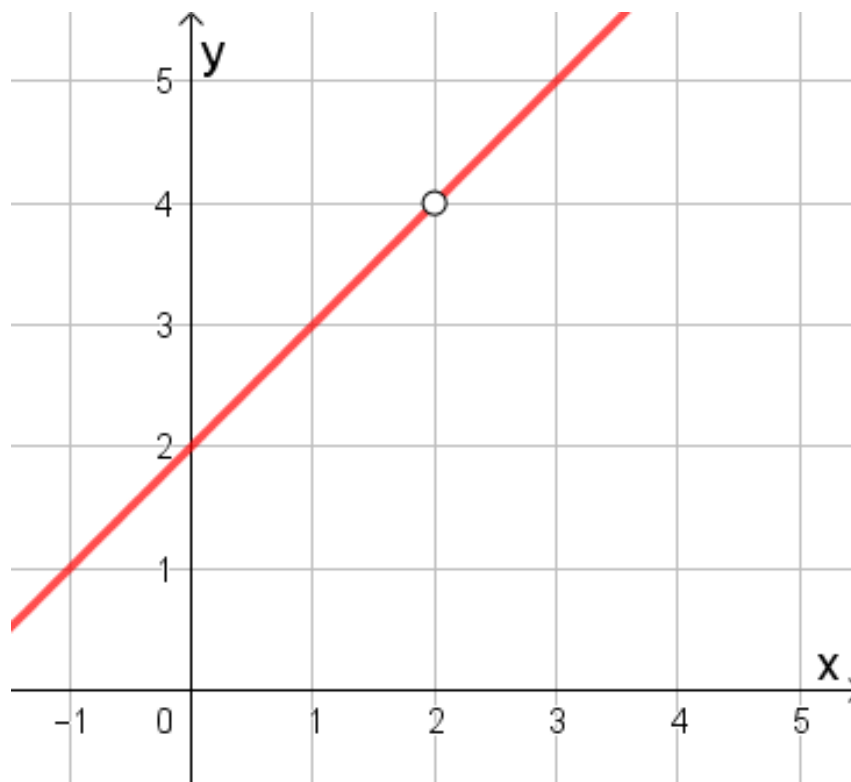
Exemplo:

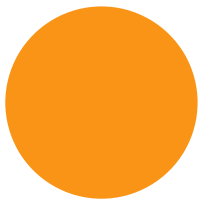




Descontinuidade removível

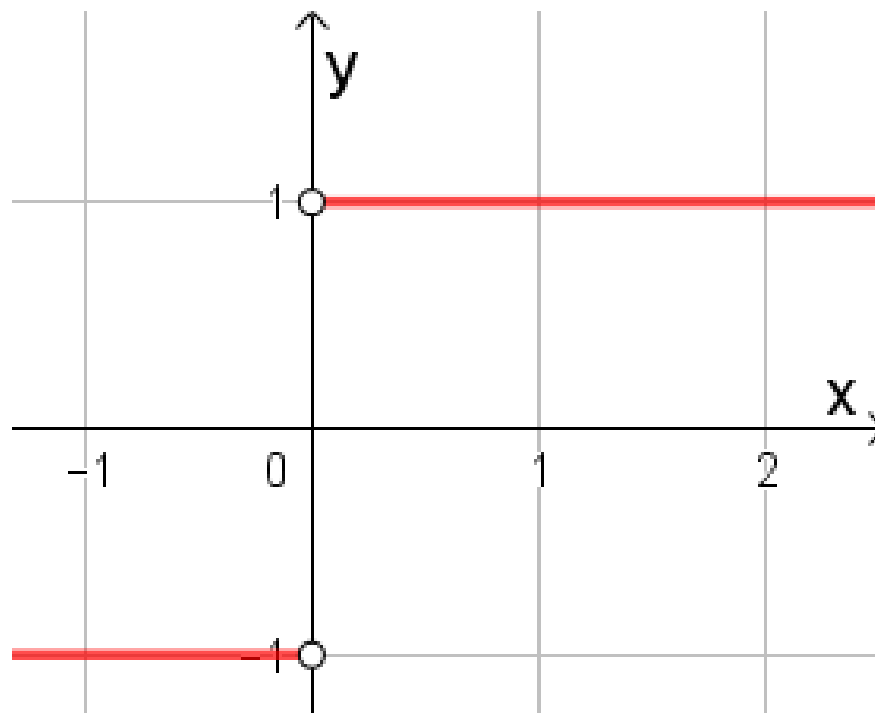
Exemplo:

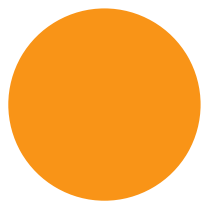




Descontinuidade do tipo salto

Exemplo:





Exemplo:

