

Fundamentos de Cálculo Aplicado

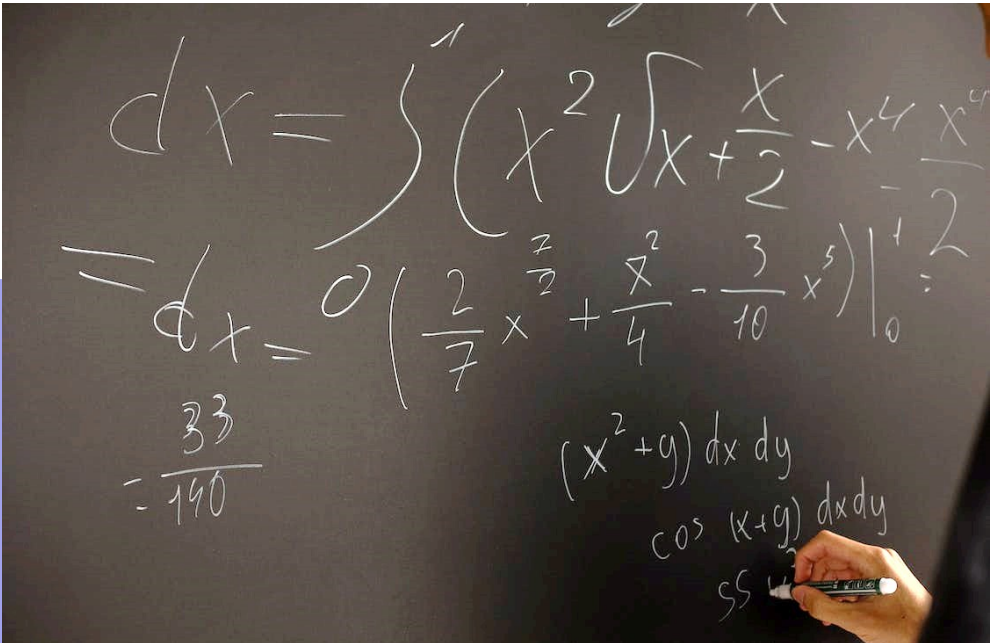
Fundamentos gerais de
Matemática

Profa. Ma. Alessandra Negrini

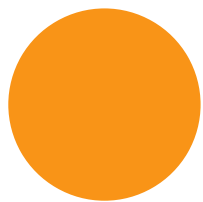


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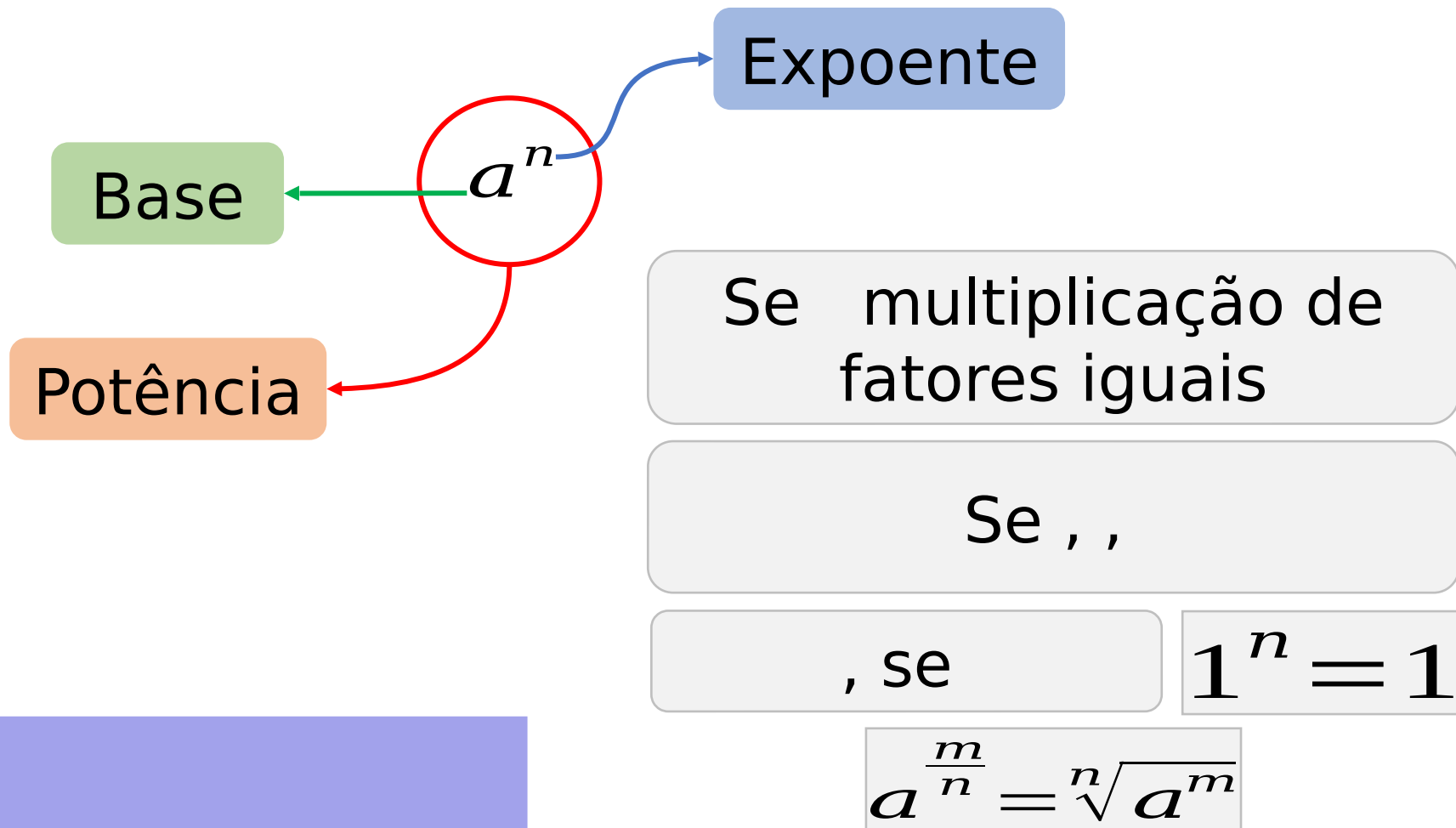
Potências e logaritmos

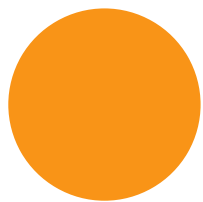


The image shows a chalkboard with handwritten mathematical work. The main equation is an integral:
$$dx = \int \left(x^2 \sqrt{x} + \frac{x}{2} - x^4 \frac{x^4}{2} \right) dx$$
 Below this, the integral is evaluated from 0 to 1:
$$= dx = 0 \left(\frac{2}{7} x^{\frac{7}{2}} + \frac{x^2}{4} - \frac{3}{10} x^5 \right) \Big|_0^1 = \frac{33}{140}$$
 To the right, there are two more expressions:
$$(x^2 + y) dx dy$$
 and
$$\cos(x+y) dx dy$$
 A hand is visible at the bottom right, holding a piece of chalk.



Potência





Propriedades das potências

Sejam ,

1)

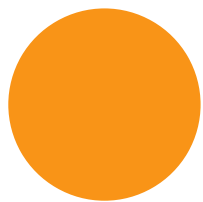
2)

3)

4)

5)

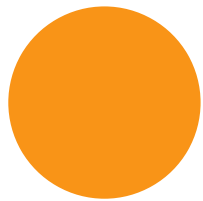




Simplificando expressões

Exemplo:

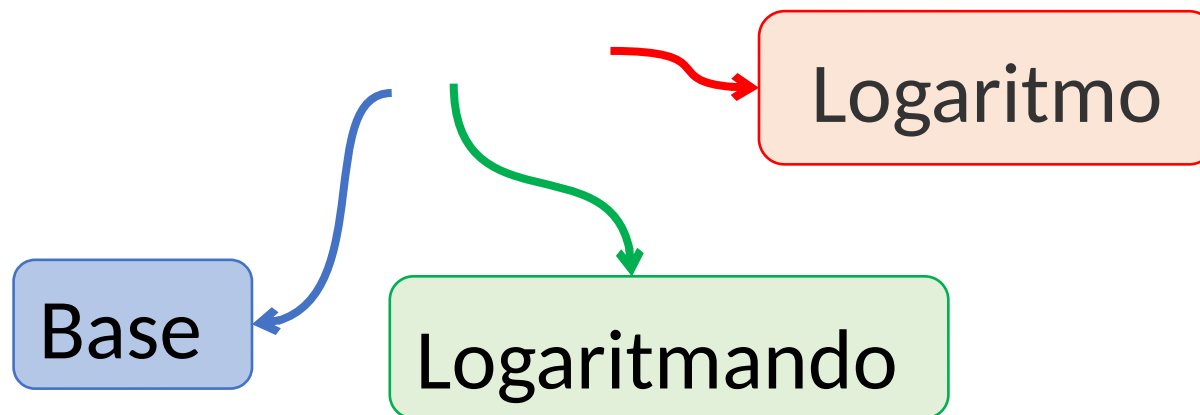




Logaritmo

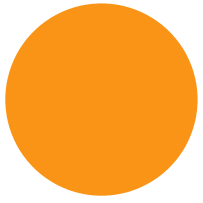
O **logaritmo** do número na base resulta em um número e pode ser descrito na forma:

com , e



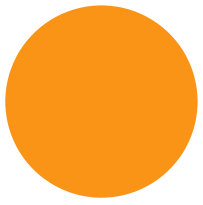
$$\log_a b = c \Leftrightarrow a^c = b$$





Exemplo:





Logaritmo

- Logaritmo decimal (10):
- Logaritmo natural ():
- Propriedades: para

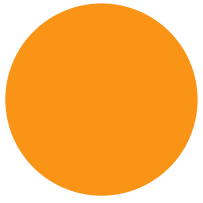
$$\log_a(b \cdot c) = \log_a b + \log_a c$$

$$\log_a\left(\frac{b}{c}\right) = \log_a b - \log_a c$$

$$\log_a b^k = k \cdot \log_a b$$

$$\log_a b = \frac{\log_c b}{\log_c a}$$





Exemplo:

