

# Fundamentos de Cálculo Aplicado

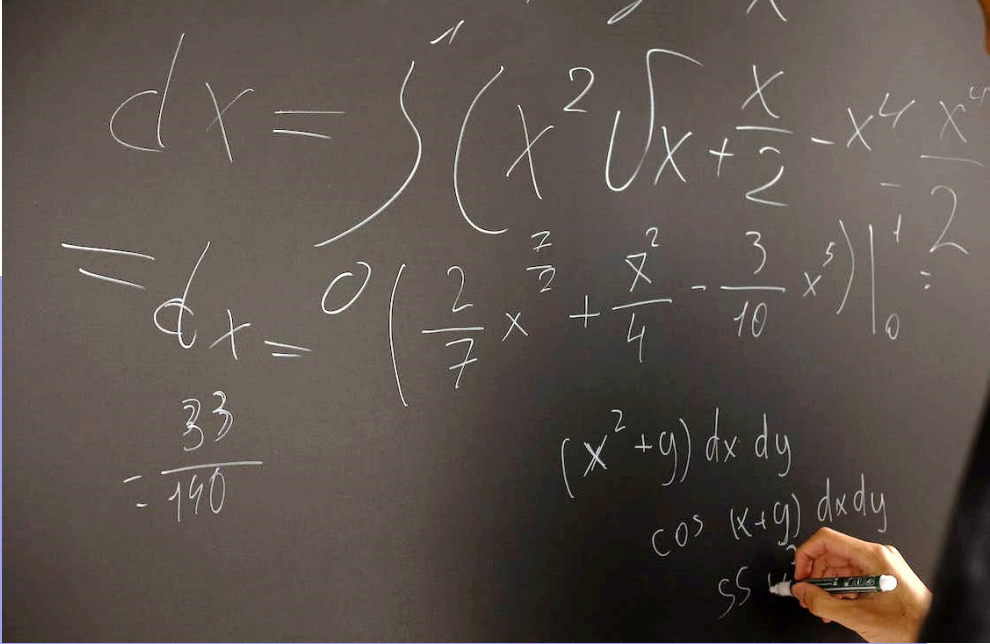
Fundamentos gerais de  
Matemática

Profa. Ma. Alessandra Negrini



# Encerramento

---



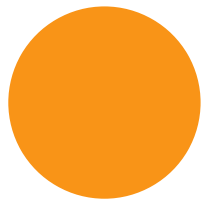
Handwritten mathematical work on a chalkboard, showing the evaluation of a definite integral and subsequent double integrals.

$$dx = \int_0^1 \left( x^2 \sqrt{x} + \frac{x}{2} - x^4 \frac{x^4}{2} \right) dx$$
$$= \left( \frac{2}{7} x^{\frac{7}{2}} + \frac{x^2}{4} - \frac{3}{10} x^{\frac{9}{2}} \right) \Big|_0^1 = \frac{33}{140}$$

Below the integral result, two double integrals are written:

$$(x^2 + y) dx dy$$
$$\cos(x+y) dx dy$$

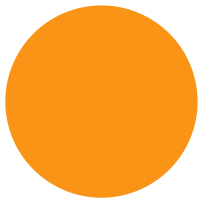
A hand is visible at the bottom right, holding a piece of chalk.



# Competências da disciplina

Compreender os principais aspectos relacionados aos conjuntos numéricos, equações e trigonometria para resolver problemas em diferentes contextos.

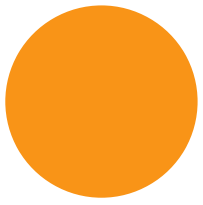




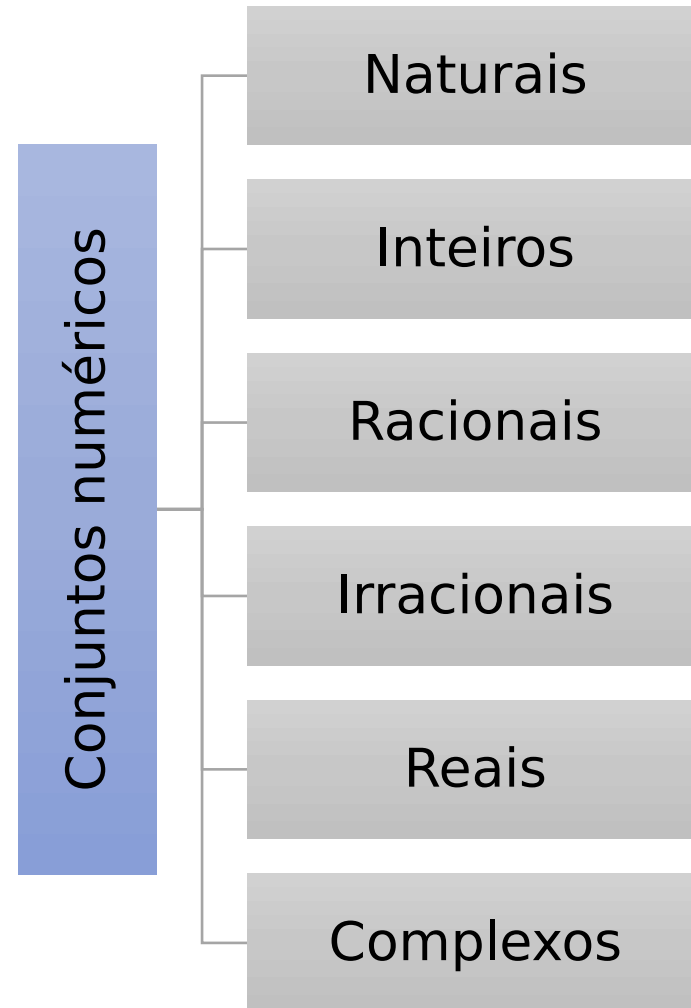
# Competências ENADE

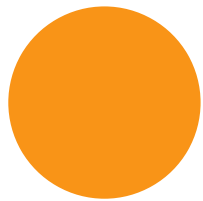
- Resolver problemas.
- Utilizar diferentes representações para um conceito matemático, transitando por representações simbólicas, gráficas e numéricas, entre outras.





# Conjuntos numéricos





# Equações de 1º grau

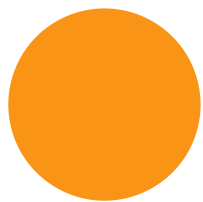
Formato

$$ax + b = 0$$

Raiz ou solução

que torna a  
equação  
verdadeira





# Equações de 2º grau

Formato

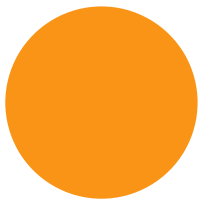
Discriminante

$$\Delta = b^2 - 4ac$$

Solução ou raiz

$$x = -\frac{b \pm \sqrt{\Delta}}{2a}$$





# Potências e logaritmos

Potência

$$a^n$$

Logaritmo

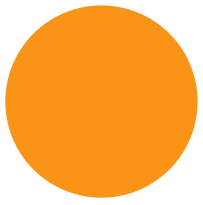
$$\log_b a$$

➤ Correspondência

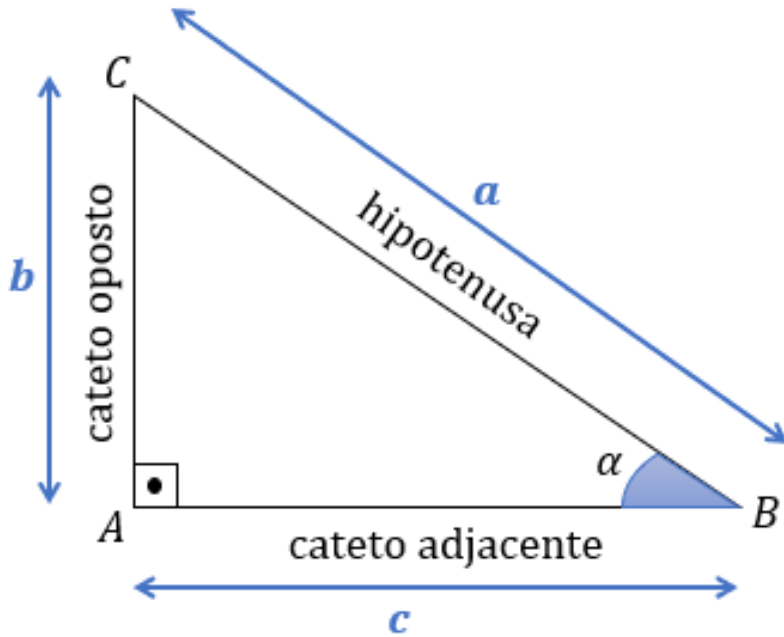
➤ Propriedades







# Trigonometria



Teorema de  
Pitágoras:

$$\text{sen}(\alpha) = \frac{\text{cateto oposto}}{\text{hipotenusa}}$$

$$\text{cos}(\alpha) = \frac{\text{cateto adjacente}}{\text{hipotenusa}}$$

$$\text{tg}(\alpha) = \frac{\text{cateto oposto}}{\text{cateto adjacente}}$$

