

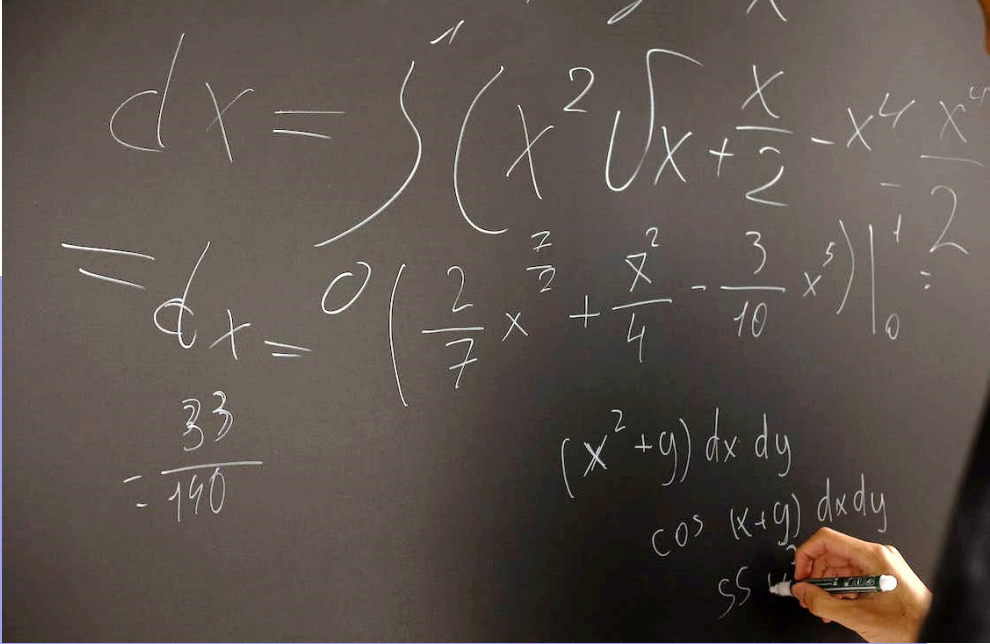
Fundamentos de Cálculo Aplicado

Fundamentos gerais sobre
funções

Profa. Ma. Alessandra Negrini



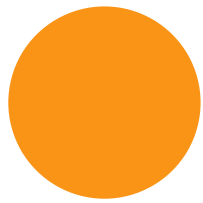
Encerramento



The image shows a chalkboard with handwritten mathematical work. The main equation is an integral of a function involving x^2 , \sqrt{x} , and $\frac{x}{2}$. Below it, the result is evaluated from 0 to 2, yielding $\frac{33}{140}$. To the right, there are additional expressions: $(x^2+y) dx dy$, $\cos(x+y) dx dy$, and a partial integral \int_0^2 .

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

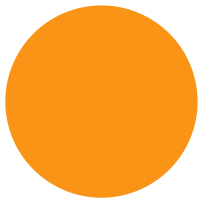
$(x^2+y) dx dy$
 $\cos(x+y) dx dy$
 \int_0^2



Competências da disciplina

Compreender os principais aspectos relacionados a funções para resolver problemas em diferentes contextos.

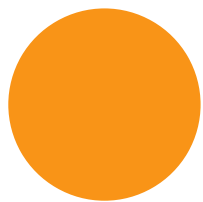




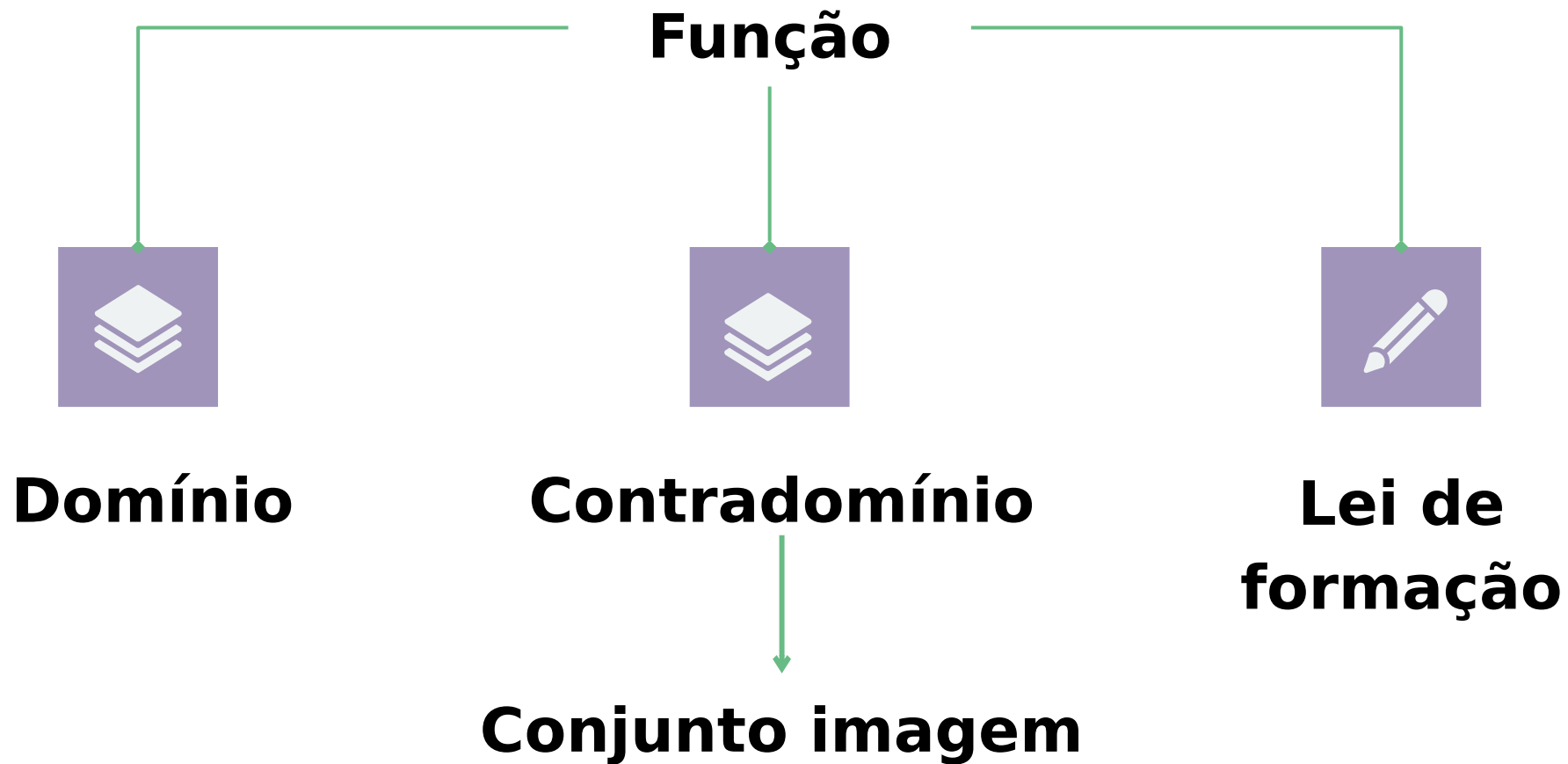
Competências ENADE

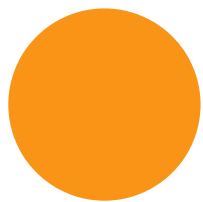
- Resolver problemas.
- Utilizar diferentes representações para um conceito matemático, transitando por representações simbólicas, gráficas e numéricas, entre outras.





Estrutura de uma função





Função afim

Função linear

$$f(x) = ax$$

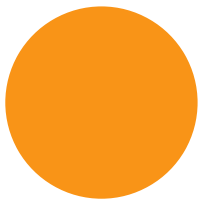
Gráfico
Reta

Função constante

$$f(x) = b$$

Zero ou raiz
tal que





Função quadrática

Gráfico
Parábola

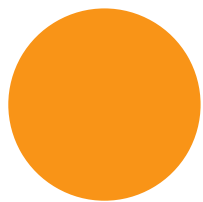
Discriminante

Vértice

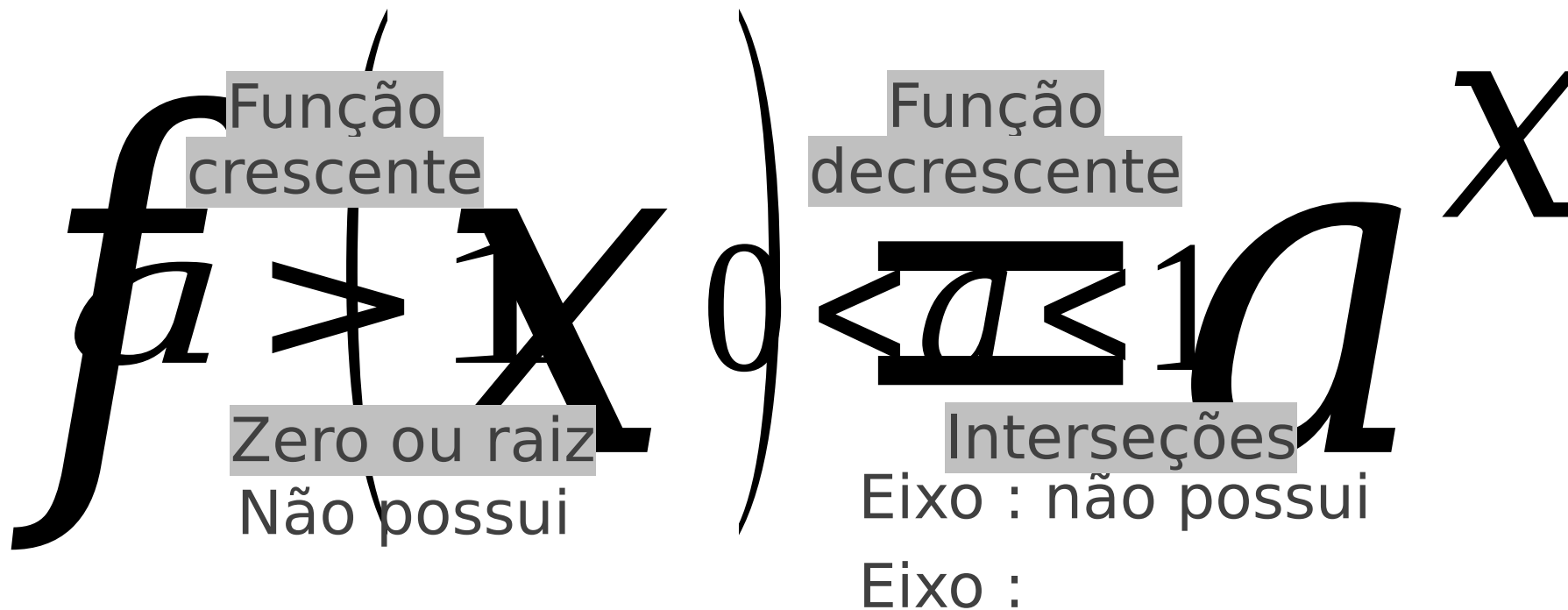
Zero ou raiz

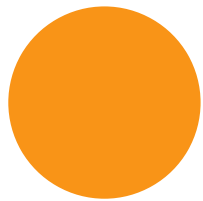
$$f(x) = ax^2 + bx + c \quad a \neq 0$$
$$x_V = -\frac{b}{2a} \quad y_V = -\frac{\Delta}{4a}$$
$$x = -\frac{b \pm \sqrt{\Delta}}{2a}$$





Função exponencial





Função logarítmica

Função crescente

$$f(x) = \log_a(x)$$

Zero ou raiz

$$x = 1$$

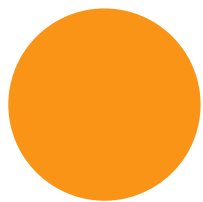
Função decrescente

$$f(x) = \log_a(x)$$

Interseções

Eixo :
Eixo : não possui





Funções trigonométricas

