

Fundamentos de Cálculo Aplicado

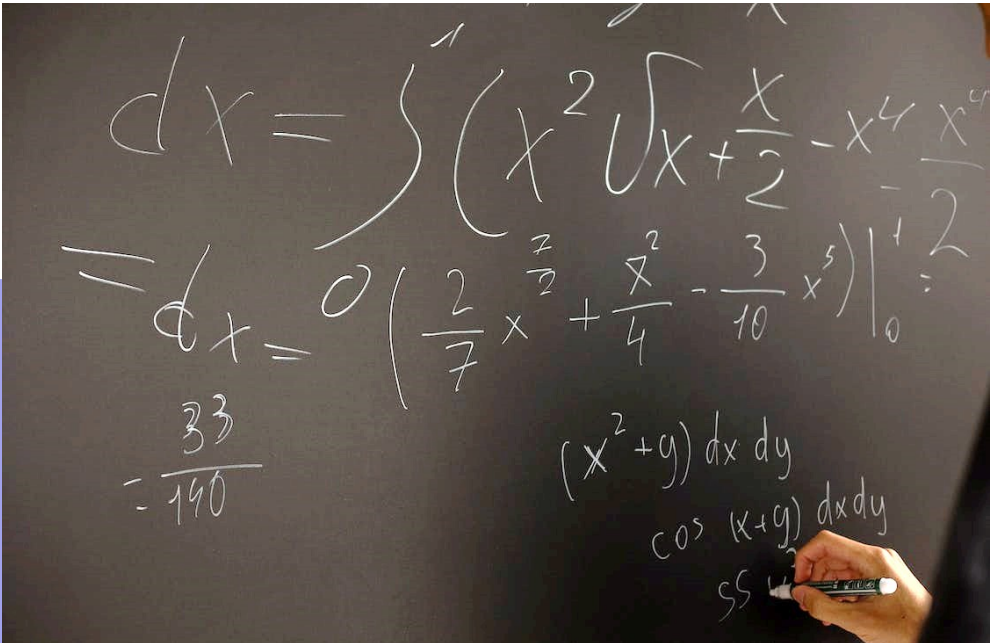
Fundamentos gerais de
Matemática

Profa. Ma. Alessandra Negrini

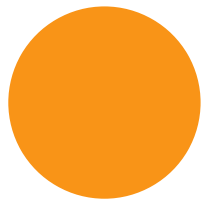


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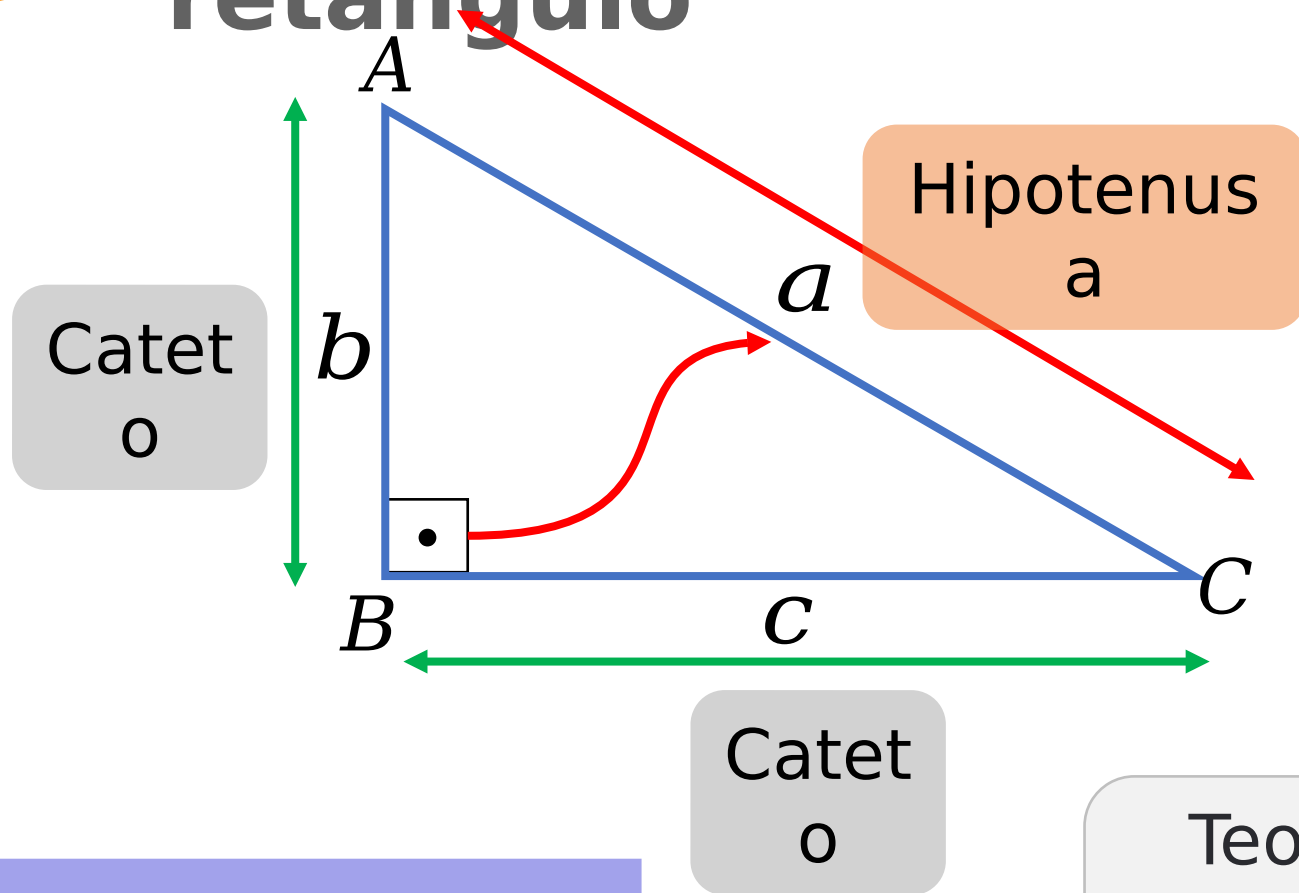
Tópicos de Trigonometria



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.

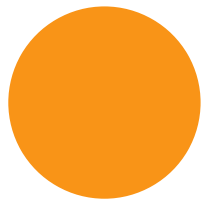


Elementos de um triângulo retângulo

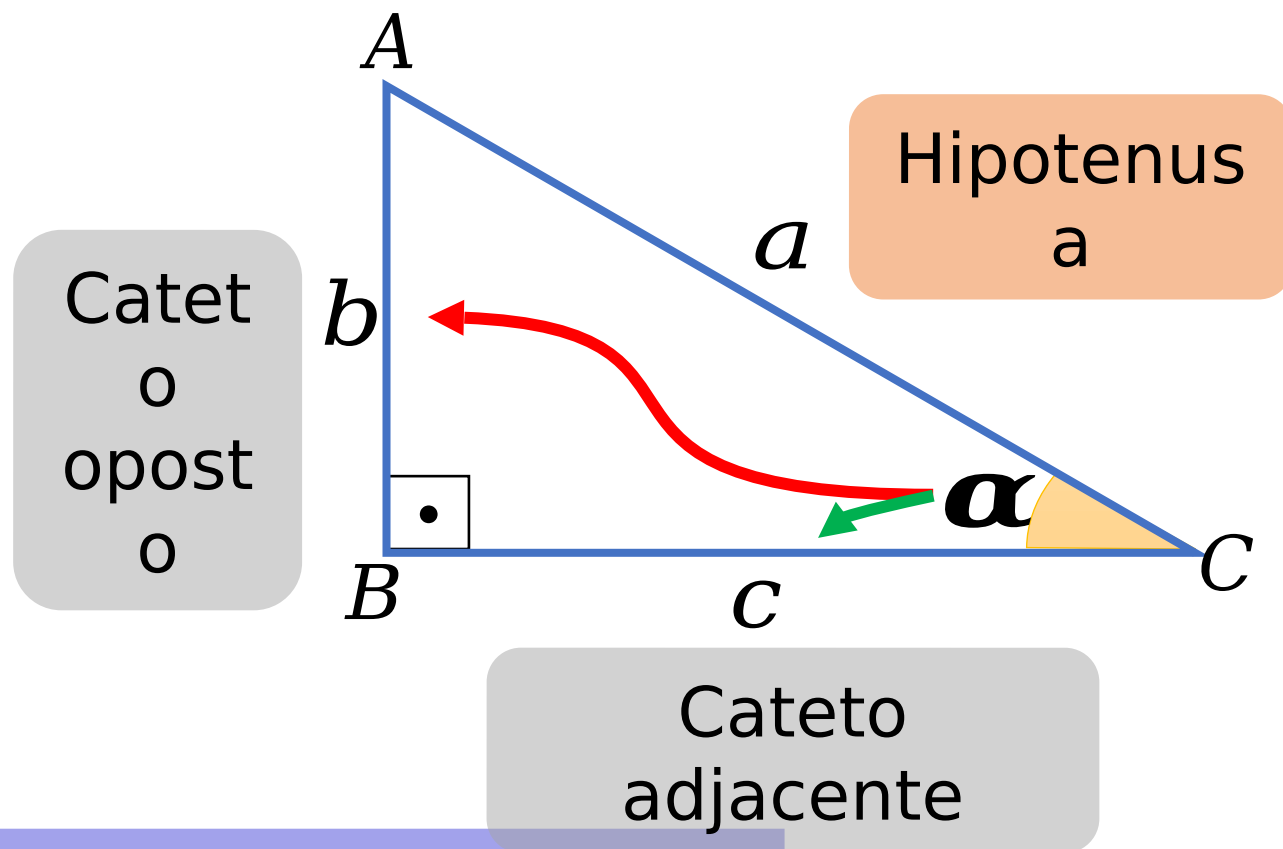


Teorema de
Pitágoras:





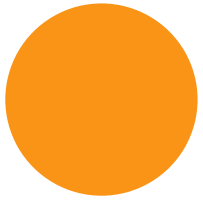
Razões trigonométricas



$$\text{sen}(\alpha) = \frac{b}{a}$$

$$\cos(\alpha) = \frac{c}{a}$$

$$\text{tg}(\alpha) = \frac{b}{c}$$



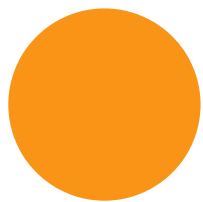
Unidades de medida

- Unidades para medida angular: grau ($^{\circ}$) e radianos (*rad*)

Para conversão entre as unidades de medida:

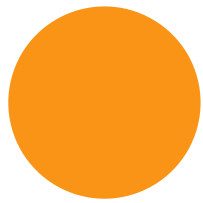
- Exemplo:





Ângulos notáveis

[illegible]



Exemplo

Parado a 120 m do centro da base de uma torre, um topógrafo descobre que o ângulo de elevação do topo da torre mede $69,7^\circ$. Determine a altura da torre.

