

Cálculo Vectorial em \mathbb{R}^3

grad(∇)

(*escalar* \rightarrow *vectorial*)

$$\int_A^B \text{grad } \phi \cdot d\mathbf{g} = \phi(B) - \phi(A)$$

rot($\nabla \times$)

(*vectorial* \rightarrow *vectorial*)

$$\iint_S \text{rot } \mathbf{A} \cdot \mathbf{n} = \oint_{\partial S} \mathbf{A} \cdot d\mathbf{g}$$

div($\nabla \cdot$)

(*vectorial* \rightarrow *escalar*)

$$\iiint_D \text{div } \mathbf{F} = \oiint_{\partial D} \mathbf{F} \cdot \mathbf{n}$$

Mais Cálculo Vectorial em \mathbb{R}^3

$$\text{rot grad} = 0$$

$$(\text{rot} = 0 + \star \Rightarrow \text{grad})$$

$$\oint \text{grad } \phi \cdot d\mathbf{g} = 0$$

$$\text{div rot} = 0$$

$$(\text{div} = 0 + \star \Rightarrow \text{rot})$$

$$\oiint \text{rot } \mathbf{A} \cdot \mathbf{n} = 0$$