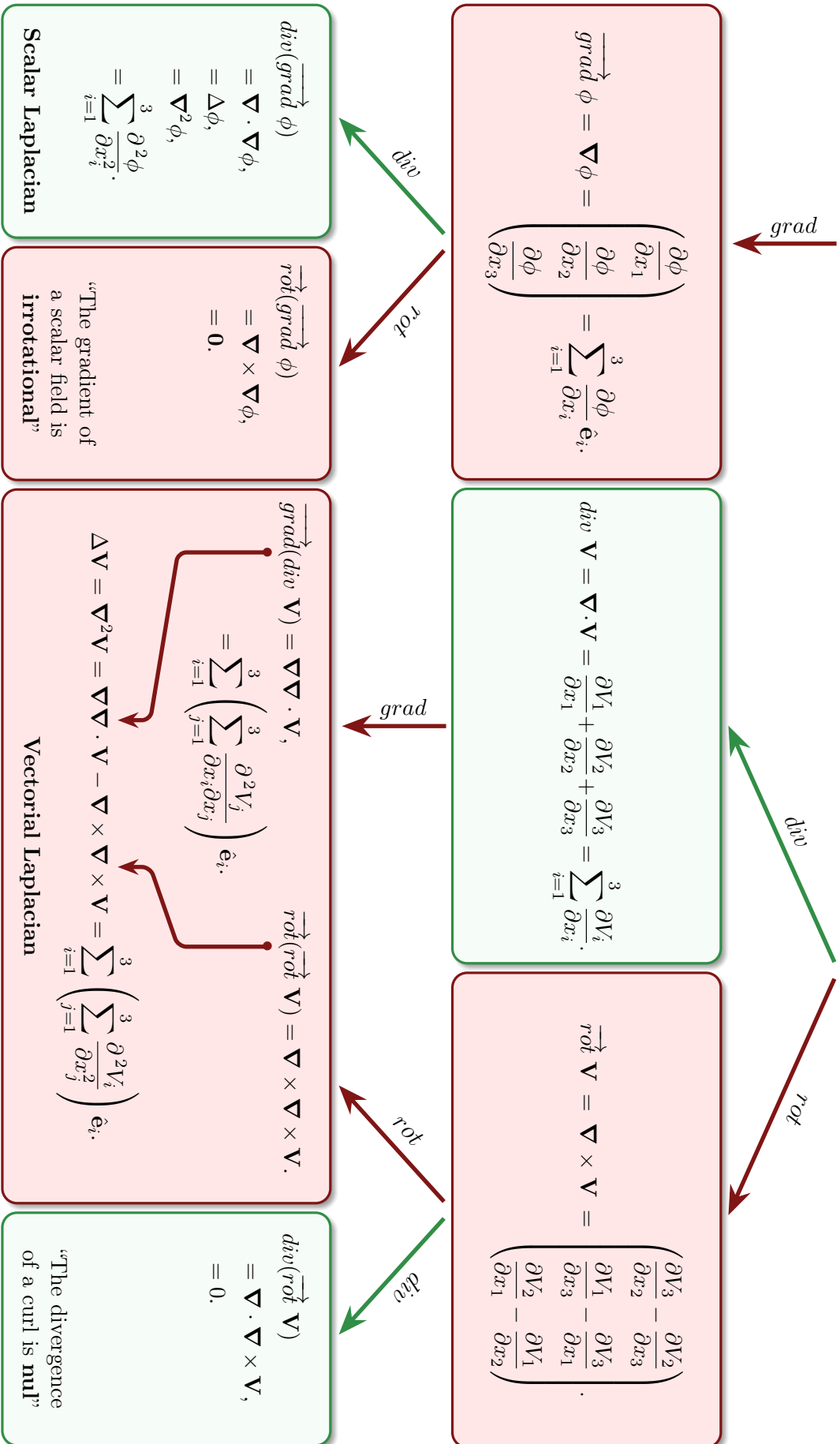


$\phi = \phi(x_1, x_2, x_3)$, ϕ is a scalar field or also called a scalar function.
 Examples: Temperature, mass

$\mathbf{V} = V_1(x_1, x_2, x_3)\hat{\mathbf{e}}_1 + V_2(x_1, x_2, x_3)\hat{\mathbf{e}}_2 + V_3(x_1, x_2, x_3)\hat{\mathbf{e}}_3$, $\mathbf{V}$ is a vectorial field, also known as a vectorial function.
 Examples: Velocity, force, acceleration



Starting from a scalar quantity, represented by a **green framebox**, the ∇ operator (pronounced “del”) can be applied as a gradient to generate a vectorial field. Starting from a vectorial quantity, represented by a **red framebox**, the ∇ operator can be applied as a divergence (scalar quantity) and/or as a curl (vector field). If ∇ operator is applied to a product of scalar and vectorial fields, $\text{div}(\phi \mathbf{V}) = \nabla \cdot (\phi \mathbf{V}) = \phi(\nabla \cdot \mathbf{V}) + \mathbf{V} \cdot (\nabla \phi)$ and $\vec{\text{rot}}(\phi \mathbf{V}) = \nabla \times (\phi \mathbf{V}) = \phi(\nabla \times \mathbf{V}) + \mathbf{V} \times \nabla \phi$.