Ejercicios Prácticos

Sobre la base de lo aprendido, en los ejemplos anteriores y la exploración de las herramientas del editor de ecuaciones, escriba las siguientes expresiones:

1. $$\frac{d\vec{A}}{du} = \lim_{\Delta u \to 0} \frac{\vec{A}(u+\Delta u) - \vec{A}(u)}{\Delta u}$$

2. $$\nabla \bullet \vec{A} = \left(\hat{i}\frac{\partial}{\partial x} + \hat{j}\frac{\partial}{\partial y} + \hat{k}\frac{\partial}{\partial z} \right) \bullet \left(A_1\hat{i} + A_2\hat{j} + A_3\hat{k} \right) = \frac{\partial A_1}{\partial x} + \frac{\partial A_2}{\partial y} + \frac{\partial A_3}{\partial z}$$

3. $$T = \sum_{\alpha=1}^{n} \sum_{\beta=1}^{n} a_{\alpha\beta} \dot{q}_\alpha \dot{q}_\beta$$

4. $$Y(x.t) = \sum_{n=1}^{\infty} \left\{ \frac{2}{l} \int_0^l f(x) sen \frac{n\pi x}{l} dx \right\} sen \frac{n\pi x}{l} \cos \frac{n\pi ct}{l}$$

5. $$\frac{\partial^2 Y}{\partial t^2} = c^2 \frac{\partial^2 Y}{\partial x^2}$$

6. $$\sigma \sqrt{\left(1 + \left(\frac{\partial Y}{\partial x}\right)^2\right)} \frac{\partial^2 Y}{\partial t} = \frac{\partial}{\partial x} \left\{ \frac{T \, \partial Y / \partial x}{\sqrt{\left(1 + \left(\frac{\partial Y}{\partial x}\right)^2\right)}} \right\}$$

7. $$^{2}_{1}H + ^{3}_{1}H \rightarrow ^{4}_{2}He + ^{1}_{0}n$$

8. $$I = \begin{pmatrix} I_{11} & I_{12} & I_{13} \\ I_{21} & I_{22} & I_{23} \\ I_{31} & I_{32} & I_{33} \end{pmatrix}$$