

EXERCICIO 04.

$$\bullet \begin{bmatrix} x_{n+1} \\ v_{n+1} \end{bmatrix} = \begin{bmatrix} x_n + h v_n + \frac{h^2}{2} a(x_n) \\ v_n + \frac{h}{2} a(x_n) + a(x_{n+1}) \end{bmatrix}$$

$$\bullet J = \begin{bmatrix} 1 + \frac{h^2}{2} \frac{\partial a(x_n)}{\partial x_n} \end{bmatrix} [1] - [h] \left[\frac{h}{2} \frac{\partial a(x_n)}{\partial x_n} \right] = 1.$$