

CUC De ANALISIS DIMENSIONAL

NOMBRE: MATÍAS RETAHAL
CURSO: 1º A

Nº de CADETE: 102.

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$$E \propto P^a T^b R^c$$

$$\text{Energía: } E \left[\text{kg} \frac{\text{m}^2}{\text{s}^2} \right] \Rightarrow E = \left[\text{m} \frac{\text{L}^2}{\text{T}^2} \right]$$

$$\text{Densidad: } \rho \left[\text{kg/m}^3 \right] \Rightarrow \rho = \left[\text{m/L}^3 \right]$$

$$\text{Tiempo: } T \left[\text{s} \right] \Rightarrow T = \left[\text{T} \right]$$

$$\text{Radio: } R \left[\text{m} \right] \Rightarrow R = \left[\text{L} \right]$$

$$E = P^a \cdot T^b \cdot R^c$$

$$\text{m} \cdot \text{L}^2 \cdot \text{T}^{-2} = \left[\text{m/L}^3 \right]^a \cdot \left[\text{T} \right]^b \cdot \left[\text{L} \right]^c$$

$$\text{m} \cdot \text{L}^2 \cdot \text{T}^{-2} = \text{m}^a / \text{L}^{3a} \cdot \text{T}^b \cdot \text{L}^c$$

$$\text{m} \cdot \text{L}^2 \cdot \text{T}^{-2} = \text{m}^a \cdot \text{L}^{-3a} \cdot \text{T}^b \cdot \text{L}^c$$

$$\text{m} \cdot \text{L}^2 \cdot \text{T}^{-2} = \text{m}^a \cdot \text{T}^b \cdot \text{L}^{-3a+c}$$

$$\text{m} = \text{m}^a$$

$$\Rightarrow 1 = a$$

$$\text{T}^{-2} = \text{T}^b$$

$$\Rightarrow -2 = b$$

$$\text{L}^2 = \text{L}^{-3 \cdot 1 + c}$$

$$\Rightarrow 2 = -3 + c$$

$$5 = c$$

$$E = P \cdot T^{-2} \cdot R^5$$