

CUC PROBLEMA DE TAYLOR

FÍSICA

10

Nombre: Angeles Rojas Alarcón.

Curso: 1º Ancla.

① Magnitud	Unidad	Dimensión
Longitud :	$d [m]$	$\dim(d) = L$
Tiempo :	$t [s]$	$\dim(t) = T$
Energía :	$E [kg \cdot \frac{m^2}{s^2}]$	$\dim(E) = M \cdot L^2 \cdot T^{-2}$
Densidad :	$\rho [kg/m^3]$	$\dim(\rho) = M L^{-3}$

② $E \propto d^a t^b \rho^c$ ③ $\dim(E) = [\dim(d)]^a [\dim(t)]^b [\dim(\rho)]^c$

④ $\dim(E) = M \cdot L^2 \cdot T^{-2}$ $\dim(t) = T$
 $\dim(d) = L$ $\dim(\rho) = M L^{-3}$

$$M L^2 T^{-2} = L^a (T)^b (M \cdot L^{-3})^c$$

$$M = 1$$

$$\boxed{c = 1}$$

$$T = -2$$

$$\boxed{-2 = b}$$

$$L = 2$$

$$2 = a - 3b$$

$$2 = a - 3$$

$$\boxed{5 = a}$$

⑤

$$E \propto d^5 \cdot t^{-2} \cdot \rho^1$$

⑥

$$E = d^5 \cdot t^{-2} \cdot \rho$$

$$\boxed{E = \frac{d^5 \cdot \rho}{t^2}}$$

$$\boxed{E = d^5 \cdot \frac{1}{t^2} \cdot \rho}$$

⑦

$$\boxed{E = K \cdot d^5 \cdot \frac{1}{t^2} \cdot \rho}$$