

Pauta Ej #3

$$P = K \rho^{\frac{n+1}{n}} ; P(V) = K \left(\frac{N}{V} \right)^{\frac{n+1}{n}}$$

$$V_i = \frac{4}{3} \pi R^3 ; V_f = \frac{4}{3} \pi (R \cdot 2)^3 = \frac{32}{3} \pi R^3$$

$$W_{1 \rightarrow 2} = \int_1^2 P(V) dV = \int_{\frac{4}{3} \pi R^3}^{\frac{32}{3} \pi R^3} K \left(\frac{N}{V} \right)^{\frac{n+1}{n}} dV =$$

$$W_{1 \rightarrow 2} = \frac{KN^{\frac{n+1}{n}}}{1 - \left(\frac{n+1}{n} \right)} \left(V^{1 - \left(\frac{n+1}{n} \right)} \right) \Big|_{V = \frac{4}{3} \pi R^3}^{V = \frac{32}{3} \pi R^3}$$

... Álgebra...

$$-nKN^{\frac{n+1}{n}} \left(\frac{1}{\sqrt[n]{V}} \right) \Big|_{V = \frac{4}{3} \pi R^3}^{V = \frac{32}{3} \pi R^3} \Rightarrow nKN^{\frac{n+1}{n}} \left(\frac{1}{\sqrt[n]{\frac{4}{3} \pi R^3}} - \frac{1}{\sqrt[n]{\frac{32}{3} \pi R^3}} \right)$$

¿Signo? Trabajo "Salto" del sistema