

حل التمرين 09

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$$W(\vec{P}) = mgh$$

$$W(\vec{P}) = \rho_e Vgh$$

تطبيق عددي : $1\text{m}^3 = 1000\text{L} = 10^3\text{L}$

$$W(\vec{P}) = 1 \times 1.10^3 \times 9,8 \times 800$$

$$W(\vec{P}) = 7,84.10^6 \text{ J}$$

$$\mathcal{P} = \frac{W(\vec{P})}{\Delta t} = \frac{\rho Vgh}{\Delta t} = \frac{V}{\Delta t} \times \rho gh \quad -2$$

$$\boxed{\mathcal{P} = D\rho gh}$$

تطبيق عددي : $\mathcal{P} = 30.10^3 \times 1 \times 9,8 \times 800$

$$\boxed{\mathcal{P} = 2,35.10^{35} \text{ W}}$$

$$D = \frac{P}{\rho gh}$$

$$D = \frac{10^3.10^6 \text{ J.s}^{-1}}{\frac{1\text{kg}}{10^{-3} \text{ m}^3} \times 9,8 \text{ N.kg}^{-1} \times 800\text{m}}$$

$$\boxed{D = 127,5 \text{ m}^3 \cdot \text{s}^{-1}}$$