

ب : ٩١ : ٠/٠٠٠٠٠

الف : ١١٧٧٢

د : ١١٧٥,٦

ح : ٠/٣٣

١,٥٦

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٥٥٥

٥٥٥

$$\rho = 1300 \frac{\text{kg}}{\text{m}^3}$$

$$D = 1 \text{ cm} = 0.01 \text{ m}$$

$$V = 1.0 \frac{\text{cm}}{\text{s}} \left(0.01 \frac{\text{m}}{\text{s}} \right)$$

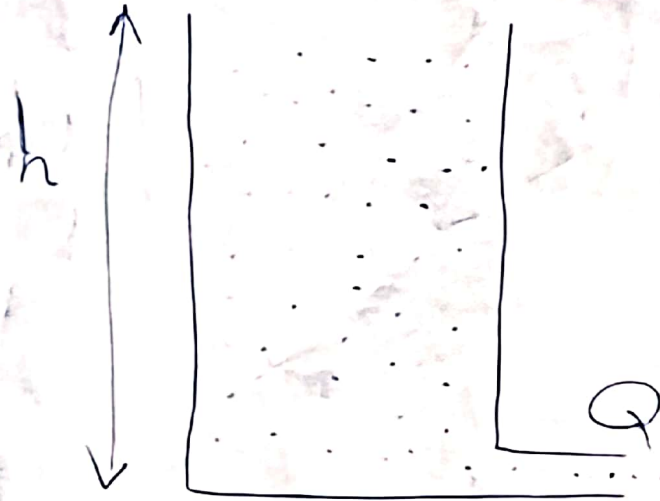
$$\dot{m} = \rho \frac{\text{kg}}{\text{h}}$$

$$\dot{m} = 1300 \times 0.01 \times 1.286 \times 10^{-3} = 0.016518 \frac{\text{kg}}{\text{s}}$$

$$A = \pi r^2 = 3.14 \times (0.01)^2 = 3.14 \times 10^{-4} \text{ m}^2$$

$$0.016518 \frac{\text{kg}}{\text{s}} \times \frac{3600 \text{ s}}{1 \text{ h}} = 59.465 \frac{\text{kg}}{\text{h}}$$

مقرب



$$\rho \cdot v \cdot h$$

قوان

$$\text{Power} = Q \cdot \gamma \cdot h$$

بالتحديد

$$\text{Power} = Q \cdot \gamma \cdot h$$

Randman

دبي

وزن الحصى

ارتفاع

$$m = 1000 \frac{\text{gr}}{\text{s}}$$

$$Q = ? \frac{\text{CC}}{\text{s}}$$

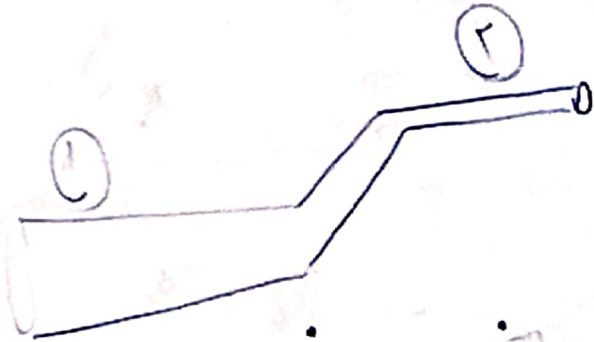
$$m = \rho V A$$

$$Q = V A$$

$$m = \rho Q \rightarrow Q = \frac{m}{\rho}$$

$$1000 \frac{\text{gr}}{\text{s}} \times \frac{1 \text{ cm}^3}{1 \text{ gr}} = 1000 \frac{\text{cm}^3}{\text{s}} \xrightarrow{1 \text{ cc} = 1 \text{ cm}^3} 1000 \frac{\text{CC}}{\text{s}}$$

اصول جریاب سیالات



$$\dot{m}_1 = \dot{m}_2$$

$$\rho_1 v_1 A_1 = \rho_2 v_2 A_2$$

$$v_1 A_1 = v_2 A_2$$

اصل تداوم
(پیوستگی)

Continuity Equation

۱- قانون بقای جرم (ماده)

۲- قانون بقای انرژی

$$\rho = 1.0 \text{ kg/m}^3$$

$$g = 9.81 \text{ m/s}^2$$

$$D = 7.9 \text{ cm} \rightarrow \propto \frac{1.0 \text{ m}}{1 \text{ cm}} = 7.9 \times 1.0 \text{ m}$$

$$v = 1.0 \text{ m/s}$$

$$h = 2.0 \text{ m}$$

$$\text{Rad} = 0.1$$

$$\text{Power} = Q \cdot \gamma \cdot h$$

$$Q = AV$$

$$\gamma = \rho \cdot g$$

$$A = M \cdot V^2 = 1.0 \text{ kg} \cdot (1.0 \text{ m/s})^2 = 1.0 \text{ kg} \cdot 1.0 \text{ m}^2/\text{s}^2$$

$$Q = AV = 1.0 \text{ kg} \cdot 1.0 \text{ m/s} \cdot 1.0 \text{ m} = 1.0 \text{ kg} \cdot \text{m}^2/\text{s}$$

$$\gamma = \rho \cdot g = 1.0 \text{ kg/m}^3 \cdot 9.81 \text{ m/s}^2 = 9.81 \text{ N/m}^3$$

$$\text{Power} = Q \cdot \gamma \cdot h \rightarrow 1.0 \text{ kg} \cdot \text{m}^2/\text{s} \cdot 9.81 \text{ N/m}^3 \cdot 2.0 \text{ m} = 19.62 \text{ N} \cdot \text{m/s} = 19.62 \text{ W}$$

$$\frac{19.62 \text{ W}}{1.0} = 19.62 \text{ W} \approx 19.6 \text{ W}$$

$$19.62 \text{ W} \approx 19.6 \text{ W}$$

$$1 \text{ hp} = 746 \text{ W}$$

$P \quad v \quad h$

$$\text{Power} = Q \cdot v \cdot h$$

$$\text{Power} = Q \cdot v \cdot h$$

the condition