

Ф-11-10

H?

... - ... - ... - ... - ... - ...

$$v = \frac{m v_0}{m+M}$$

$$\frac{(m+M) \cdot v^2}{2} = (m+M) \cdot g \cdot H$$

$$\frac{(m+M) \cdot m^2 \cdot v_0^2}{2 \cdot (m+M)^2} = (m+M) \cdot g \cdot H$$

$$H = \frac{m^2 \cdot v_0^2}{2g \cdot (M+m)^2}$$

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2.

Земле

$$Q = -A$$

Знает изм. мех. энергии:

$$E_k - E_{\pi} = A = -Q$$

$$Q = E_{\pi} - E_k$$

луч: $E_{\pi} = \frac{m v_0^2}{2}$

конт: $E_k = \frac{(M+m)m^2}{2} = \frac{m^2 v_0^2}{2(M+m)}$

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$$Q = \frac{m v_0^2}{2} - \frac{m^2 v_0^2}{2(M+m)} = \frac{M m v_0^2}{2(M+m)}$$

$$\eta = \frac{Q}{E} = \frac{M}{M+m}$$

Земле

3. Дано:

$P = 100 \text{ Вт}$
 $\rho = 1000 \text{ кг/м}^3$

$n = 2$

$T = \text{const}$

$$P_1 V_1 = P_2 V_2$$

$$P_1 = P + \rho g h$$

$$P_2 = P$$

луч: $V_1 = \frac{4}{3} \pi R_1^3$

$$(P + \rho gh) \frac{4}{3} \pi R_1^3 = P \frac{4}{3} \pi R_2^3$$

$$\frac{R_2}{R_1} = n = 2$$

$$P + \rho gh = P \cdot n^3$$

$$h = \frac{P(n^3 - 1)}{\rho g} = 70 \text{ m}$$

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Answer: 70 m

4. Duro:

$$I_1 = 15 \text{ A}$$

$$P_1 = 135 \text{ Bt}$$

$$I_2 = 6 \text{ A}$$

$$P_2 = 64,613 \text{ Bt}$$

$$E = ?$$

$$r = ?$$

Jemene

$$P = I \epsilon - I^2 r$$

$$\begin{cases} P_1 = I_1 \epsilon - I_1^2 r \\ P_2 = I_2 \epsilon - I_2^2 r \end{cases}$$

$$\epsilon = \frac{P_2 I_1^2 - P_1 I_2^2}{I_1 I_2 (I_1 - I_2)} = 12 \text{ B}$$

$$r = \frac{P_2 I_1 - P_1 I_2}{I_1 I_2 (I_1 - I_2)} = 0,2 \text{ Ohm}$$

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5. Duro:

$$E = 10^4 \text{ B/m}$$

$$h = 10 \text{ cm} = 0,1 \text{ m}$$

$$m = 202 = 0,02 \text{ kg}$$

$$q = 10^{-5} \text{ C}$$

$$P = ?$$

Jemene

$$A = (mg + qE)h$$

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