

МБОУ	ПРЕДМЕТ	КЛАСС		№ АУДИТОРИИ		№ МЕСТА В АУДИТОРИИ	
23	ФИЗ	11	А	00	28	1	1

1 - 95

2 - 58

3 - Н

4 - Н

4 - Н

148

N2

Dano:

$$T = 1 \text{ H}$$

$$S = 400 \text{ cm}^2 = 0,04 \text{ m}^2$$

$$\rho = 1000 \frac{\text{kg}}{\text{m}^3}$$

$$h_2 - h_1 = ?$$

CU

Решение:

$$F_1 = \rho g h_1 S - T$$

$$F_2 = \rho g h_2 S$$

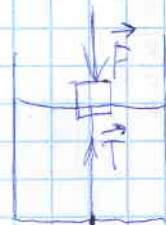
$$F_1 = F_2 \text{ т.к. сила давления уравновешивает}$$

$$\rho g h_1 S - T = \rho g h_2 S$$

$$h_2 - h_1 = \frac{T}{\rho g S}$$

$$h_2 - h_1 = \frac{1 \text{ H}}{1000 \frac{\text{kg}}{\text{m}^3} \cdot 10 \frac{\text{H}}{\text{с}^2} \cdot 0,04 \text{ м}^2} = 0,0025 \text{ м} = 2,5 \text{ мм}$$

Ответ: 2,5 мм



N1

Dano:

$$a = \text{const}$$

$$v_0 = 0 \frac{\text{м}}{\text{с}}$$

$$S_1 = S_2 = \frac{1}{2} S$$

$$\frac{v_2}{v_1} = ?$$

Решение:

$$S = v_0 t + \frac{a t^2}{2} = \frac{a t^2}{2}$$

$$S_1 = v_0 t_1 + \frac{a t_1^2}{2} = \frac{a t_1^2}{2}$$

$$S_2 = v_0 t_2 + \frac{a t_2^2}{2}$$

$$t = \sqrt{\frac{2S}{a}}$$

$$t_1 = \sqrt{\frac{S}{a}}$$

$$t_2 = t - t_1$$

$$t_2 = \sqrt{\frac{2s}{a}} - \sqrt{\frac{s}{a}} = \sqrt{\frac{s}{a}} (\sqrt{2} - 1)$$

$$v_1 = \frac{s_1}{t_1} = \frac{\frac{1}{2}s}{\sqrt{\frac{s}{a}}} = \frac{\sqrt{sa}}{2}$$

$$v_2 = \frac{s_2}{t_2} = \frac{\frac{1}{2}s}{\sqrt{\frac{s}{a}}(\sqrt{2}-1)} = \frac{\sqrt{sa}}{2(\sqrt{2}-1)}$$

$$\frac{v_2}{v_1} = \frac{2\sqrt{sa}}{2(\sqrt{2}-1)\sqrt{sa}} = \frac{1}{\sqrt{2}-1} \approx 2,5$$

Antw: 2,5

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