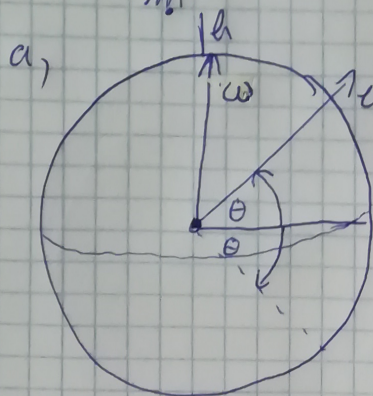


ILLYE'S DAVID GYULA

ZYT GYT



$$F_{\text{cor}} = -2m(\omega \times v) = 2m \cdot \omega \cdot 1 \cdot 1 \cdot \sin(90^\circ - \theta)$$

$$|F_{\text{cor}}| = 2 \cdot m \cdot \omega \cdot g \cdot t \cdot \sin(90^\circ - \theta)$$

Ha pedig a léli áldalon van:

$$F = 2 \cdot m \cdot \omega \cdot g \cdot t \cdot \sin(90^\circ + \theta)$$

$$|\sin(90^\circ - \theta)| = |\sin(90^\circ + \theta)|$$

b)

$$\Delta l = \frac{a}{2} \cdot t^2$$

$$F = m \cdot a$$

$$m \cdot a = 2 \cdot m \cdot \omega \cdot g \cdot t \cdot \sin(90^\circ - \theta) \quad | : m$$

$$a = 2 \cdot \omega \cdot g \cdot t \cdot \sin(90^\circ - \theta)$$

$$\Delta l = \omega \cdot g \cdot t^3 \cdot \sin(90^\circ - \theta)$$

c)

$$h = 10 \text{ m}$$

$$\theta = 47,5^\circ$$

(Budapest)

$$g = 10 \frac{\text{m}}{\text{s}^2}$$

$$t = ?$$

$$\omega = ?$$

$$l = ?$$

$$h = v_0 \cdot t - \frac{g}{2} \cdot t^2$$

$$|h| = \frac{g}{2} t^2$$

$$10 = \frac{10}{2} \cdot t^2$$

$$2 = t^2$$

$$t = \sqrt{2} \text{ s}$$

$$\omega = \frac{2\pi}{T}$$

$$T = 24 \text{ h} = 1440 \text{ min} = 86400 \text{ s}$$

$$\omega \approx 7,27 \cdot 10^{-5} \frac{1}{\text{s}}$$

$$\Delta l = \omega g t^3 \sin(90^\circ - \theta)$$

$$\Delta l = 7,27 \cdot 10^{-5} \cdot 10 \cdot \sqrt{2}^3 \cdot \sin(90^\circ - 47,5^\circ)$$

$$\Delta l \approx 1,4 \cdot 10^{-3} \text{ m} = 1,4 \text{ mm}$$