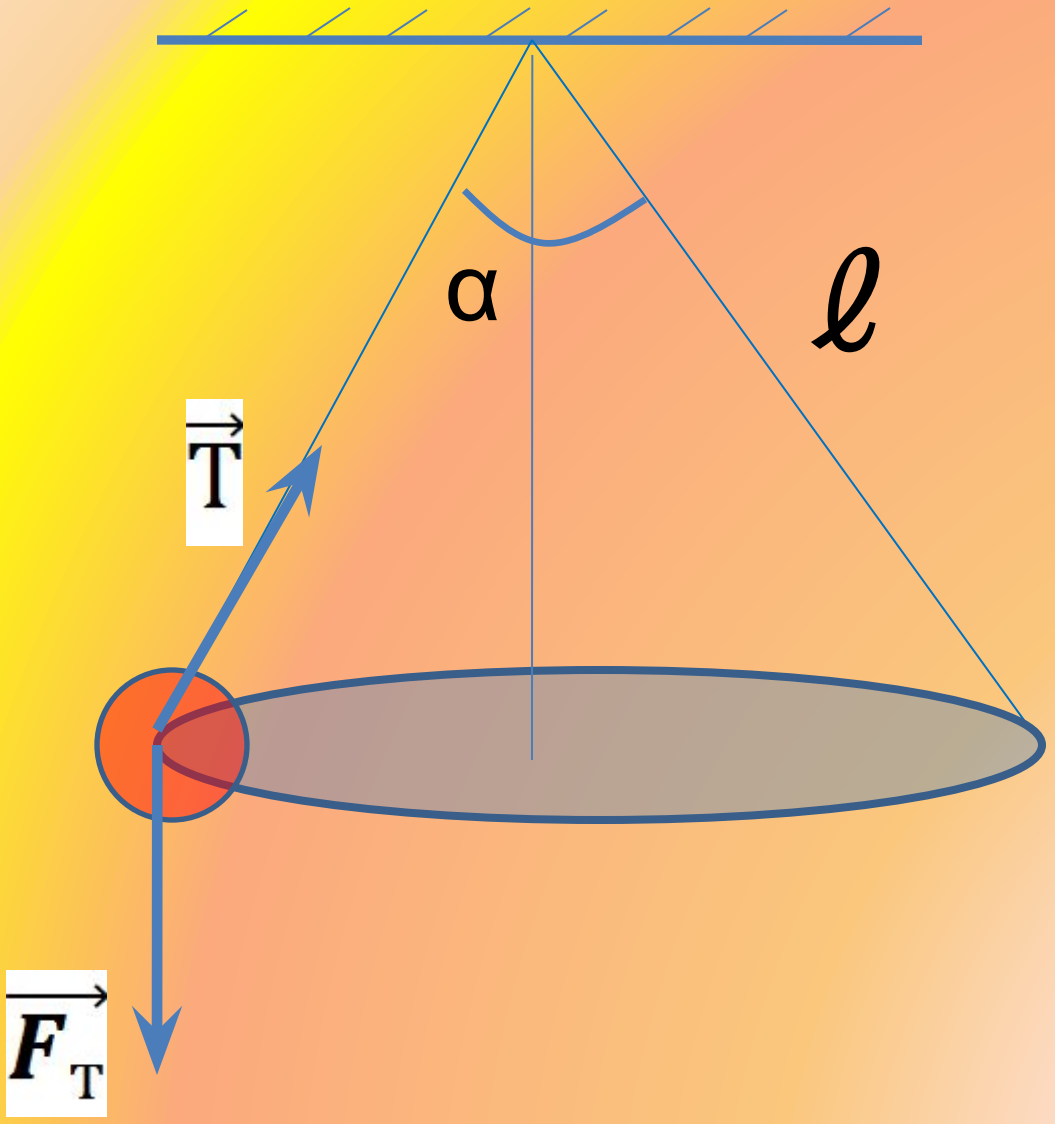
Бибиков Д. Н.



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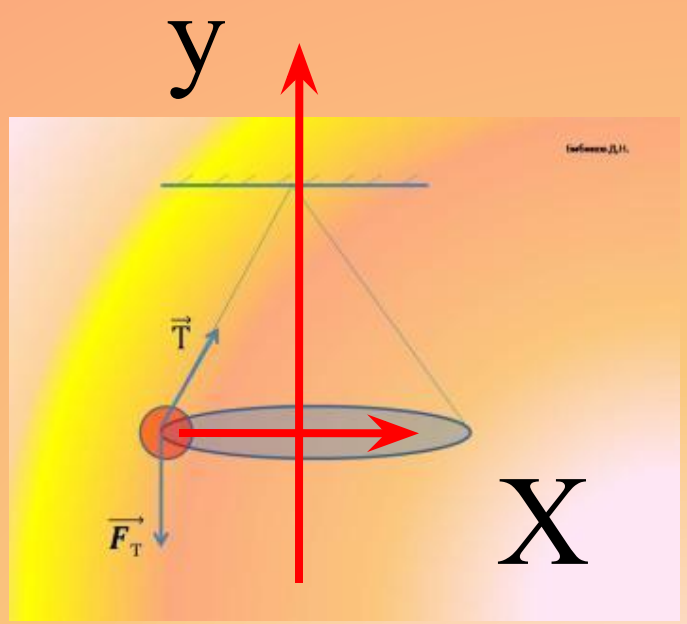
$$\vec{F} = m\vec{a}$$

$$\overrightarrow{F_T} + \vec{T} = m\vec{a}$$

$$oy) T\cos\frac{\alpha}{2} - F_T = 0$$

$$ox)\ T\sin\frac{\alpha}{2} = m\frac{v^2}{R}$$

$$\frac{\sin\frac{\alpha}{2}}{\cos\frac{\alpha}{2}} = \frac{\omega^2 R}{g}$$



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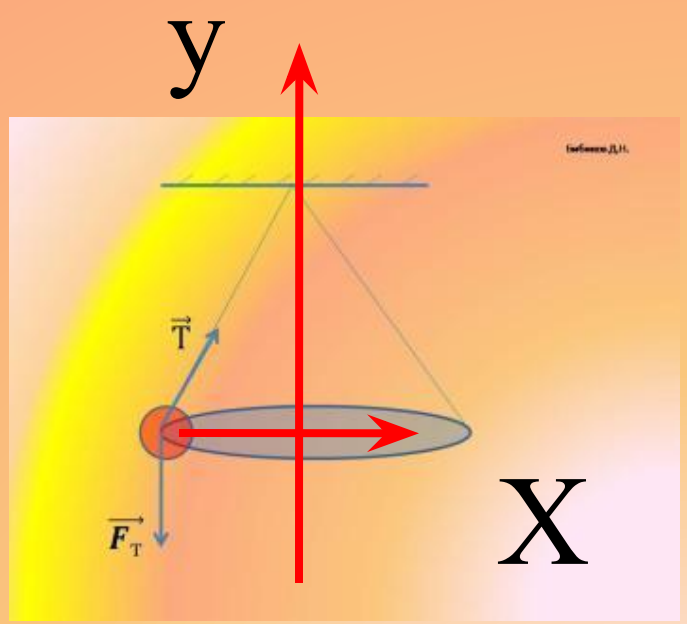
$$\frac{\sin\frac{\alpha}{2}}{\cos\frac{\alpha}{2}} = \frac{\omega^2 \ell \sin\frac{\alpha}{2}}{g}$$

$$\frac{1}{\cos\frac{\alpha}{2}} = \frac{4\pi^2 n^2 \ell}{g}$$



$$n = \sqrt{\frac{g}{4\pi^2 \ell \cos\frac{\alpha}{2}}}$$

$$n = \frac{1}{2\pi}\sqrt{\frac{g}{\ell \cos\frac{\alpha}{2}}}$$