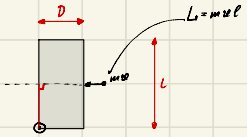
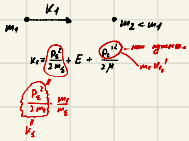
№3





№16

$R = \frac{v^3}{|a_\tau a_y - a_y a_\tau|} \to \infty$

$R = \frac{v^2}{|a_y|} = \frac{v^2}{a_n}$

$\omega = \frac{4\ell}{L}$; $a_n = \frac{L\omega^2}{2} = \frac{4}{2} \cdot \frac{\ell^2}{L^2}\omega^2$

$R_r = \frac{(3\omega^2)\,l}{8\cdot\omega^2} = \frac{3}{8}\,l$

№46