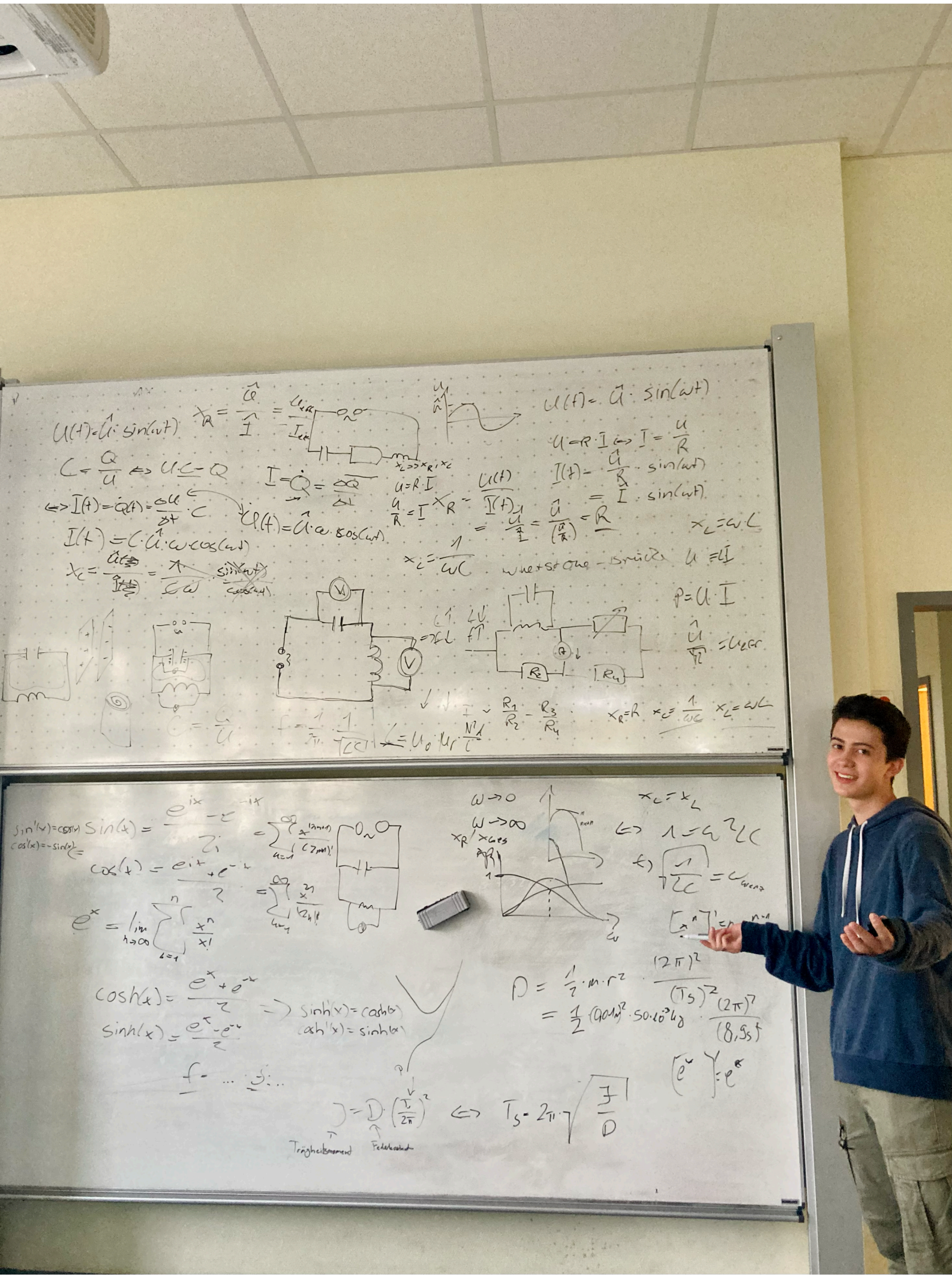
$U(t) = \hat{U} \cdot \sin(\omega t)$
$C = \frac{Q}{U} \Leftrightarrow U \cdot C = Q$
$\Leftrightarrow I(t) = \dot{Q}(t) = \frac{\Delta U}{\Delta t} \cdot C$
$I(t) = C \cdot \hat{U} \cdot \omega \cdot \cos(\omega t)$
$U = R \cdot I \Leftrightarrow I = \frac{U}{R}$
$I(t) = \frac{\hat{U}}{R} \cdot \sin(\omega t)$
$= \hat{I} \cdot \sin(\omega t)$
$x_L = \omega L$
$x_C = \frac{1}{\omega C}$
$P = U \cdot I$
$\hat{U} = U_{eff}$
$f = \frac{1}{2\pi} \frac{1}{\sqrt{LC}}$
$\sin(x) = \frac{e^{ix} - e^{-ix}}{2i}$
$\cos(x) = \frac{e^{ix} + e^{-ix}}{2}$
$e^x = \lim_{n \to \infty} \sum_{k=1}^{n} \frac{x^n}{n!}$
$\cosh(x) = \frac{e^x + e^{-x}}{2}$
$\sinh(x) = \frac{e^x - e^{-x}}{2}$
$\sinh'(x) = \cosh(x)$
$\cosh'(x) = \sinh(x)$
$x_C = x_L$
$\Leftrightarrow 1 = \omega^2 LC$
$f) \frac{1}{2\pi\sqrt{LC}} = \omega_{Eigen}$
$D = \frac{1}{2} \cdot m \cdot r^2 \cdot \frac{(2\pi)^2}{(T_S)^2}$
$= \frac{1}{2} (0{,}01\,m)^2 \cdot 50 \cdot 10^{-3}\,kg \cdot \frac{(2\pi)^2}{(8{,}95\,s)^2}$
$M = D \cdot \left(\frac{T_1}{2\pi}\right)^2 \Leftrightarrow T_S = 2\pi \sqrt{\frac{J}{D}}$
Trägheitsmoment
Federkonstante