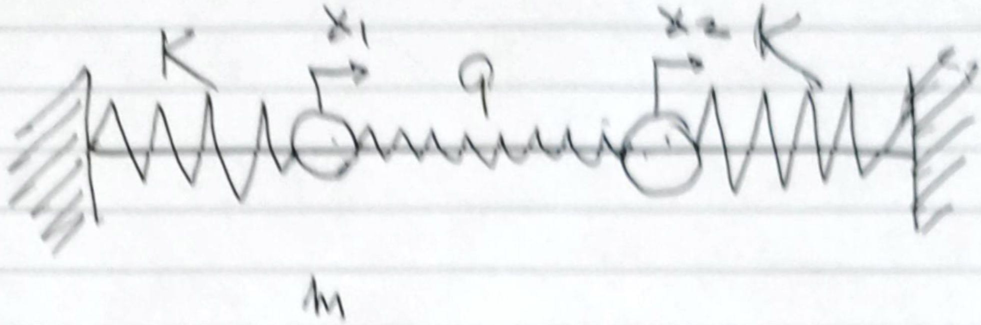


$$m\ddot{x}_1 = -Kx_1 - q(x_1 - x_2)$$

$$m\ddot{x}_2 = -Kx_2 - q(x_2 - x_1)$$

$$x_{1,2} = \xi_{1,2}\, e^{i\omega t}$$

$$+m\omega^2 \xi_1 = +(K+q)\xi_1 \mp q\xi_2$$

$$+m\omega^2 \xi_2 = +(K+q)\xi_2 \mp q\xi_1$$

$$\begin{cases} \omega^2 \xi_1 = \frac{K+q}{m}\xi_1 - \frac{q}{m}\xi_2 \\ \omega^2 \xi_2 = \frac{K+q}{m}\xi_2 - \frac{q}{m}\xi_1 \end{cases}$$

$$\det\begin{bmatrix} \frac{K+q}{m} - \omega^2 & -\frac{q}{m} \\ -\frac{q}{m} & \frac{K+q}{m} - \omega^2 \end{bmatrix} = 0$$

$$\omega^4 - 2\omega^2\frac{K+q}{m} - \left(\frac{q}{m}\right)^2 + \left(\frac{K+q}{m}\right)^2 = 0$$

$$\omega^2 = \frac{K+q}{m} \pm \left[\left(\frac{K+q}{m}\right)^2 - \left(\frac{K+q}{m}\right)^2 + \left(\frac{q}{m}\right)^2\right]^{1/2}$$

$$\omega^2 = \frac{K+q}{m} \pm \frac{q}{m} \to \frac{K+2q}{m}$$

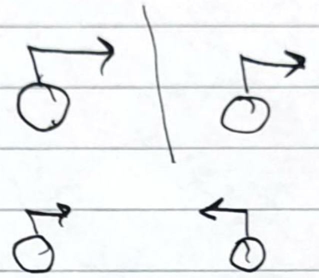
$$\to K/m$$

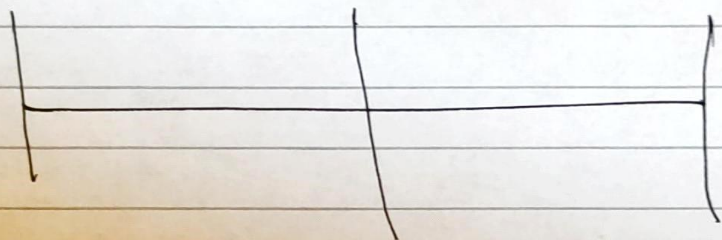
$$\omega^2(\xi_1+\xi_2) = \left(\frac{K+g}{m}\right)(\xi_1+\xi_2) - \frac{g}{m}(\xi_1+\xi_2)$$

$$\omega^2 = \frac{K}{m}$$

$$\omega^2(\xi_1-\xi_2) = \frac{K+g}{m}(\xi_1-\xi_2) + \frac{g}{m}(\xi_1-\xi_2)$$

$$\omega^2 = \frac{K+2g}{m}$$

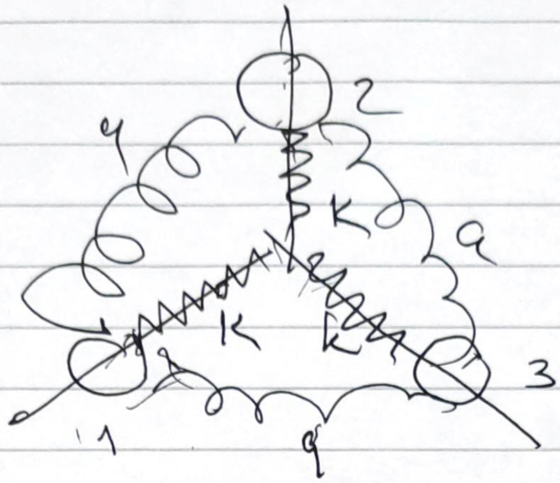




$\sigma \mid I \, , R$

σ	1	R_r
1	1	R
R	R	1

$$\begin{pmatrix}\xi_1 \\ \xi_2\end{pmatrix} \quad \begin{pmatrix}0 & 1 \\ 1 & 0\end{pmatrix} \quad \begin{pmatrix}-1 & 0 \\ 0 & -1\end{pmatrix}$$



$C^3 = I$

$C_3 \{ I, C, C^2$

C_3	1	C	C^2
1	1	C	C
C	C	C^2	1
C^2	C^2	1	C

x_1
x_2
x_3

$C - T_c$

$C^3 = I \qquad T_c^3 = \hat{I}$

$\hat{T}_c \psi_\lambda = \lambda \psi_\lambda \qquad \lambda^3 = 1$

$\lambda_0 = 1 \qquad \lambda_1 = e^{2\pi i/3} \qquad \lambda_2 = e^{-2\pi i/3}$

$\omega_0 \quad x_1 + x_2 + x_3 = \psi_0$

$x_1 + x_2 e^{2\pi i/3} + x_3 e^{4\pi i/3}$

$x_1 + x_2 e^{-2\pi i/3} + x_3 e^{-4\pi i/3}$

$60 \times 3 = 180$
6
$\overline{174}$

3 — trans
3 — rotation