No. 2.1. $\frac{d\tilde{\vec{x}}}{d\tilde{t}} = \tilde{\vec{v}} \quad \Leftrightarrow \quad \frac{\xi}{\tau} \cdot \frac{d\vec{x}}{dt} = \phi \cdot \vec{v} \quad \Rightarrow \quad \frac{\xi}{\tau} \overset{!}{=} \phi \quad (\mathrm{I})$

$$\tilde{m}_i \cdot \frac{d\tilde{\vec{v}}}{d\tilde{t}} = \tilde{m}_i \cdot \sum_{k \neq i} \tilde{m}_k \cdot \frac{\tilde{\vec{x}}_k - \tilde{\vec{x}}_i}{|\tilde{\vec{x}}_k - \tilde{\vec{x}}_i|^3} \quad \Leftrightarrow \quad \mu \cdot \frac{\phi}{\tau} \frac{d\vec{v}}{dt} = \frac{\mu^2}{\xi^2} \cdot m_i \cdot \sum_{k \neq i} m_k \cdot \frac{\vec{x}_k - \vec{x}_i}{|\vec{x}_k - \vec{x}_i|^3}$$

$$\Rightarrow \mu \cdot \frac{\phi}{\tau} \overset{!}{=} \frac{\mu^2}{\xi^2} \quad \Leftrightarrow \quad \frac{\phi}{\tau} = \frac{\mu}{\xi^2} \quad (\mathrm{II})$$

$$\Rightarrow \begin{cases} \xi = \phi \cdot \tau \\ \mu = \frac{\xi^2 \cdot \phi}{\tau} = \frac{\phi^2 \tau^2 \cdot \phi}{\tau} = \tau \cdot \phi^3 \end{cases}$$

$\Rightarrow$ four variables and two constraints $\Rightarrow$ two degrees of freedom

$\hookrightarrow$ with: $\mu = \mu(G)$