Besides that,

$$\dot{\theta}(t+\Delta t) = \dot{\theta}(t) + \ddot{\theta}(t)\Delta t$$

$$\theta(t+\Delta t) = \theta(t) + \dot{\theta}(t)\Delta t + \frac{1}{2}\ddot{\theta}(t)\Delta t^2$$

When $t = 0$, we have:

$$\dot{\theta}(0+\Delta t) = \dot{\theta}(0) + \ddot{\theta}(0)\Delta t \rightsquigarrow \dot{\theta}(\Delta t) = \begin{bmatrix} -15,1035 \\ 21,6435 \end{bmatrix} \cdot \Delta t$$

$$\theta(0+\Delta t) = \theta(0) + \dot{\theta}(0)\Delta t + \frac{1}{2}\ddot{\theta}(0)\Delta t^2$$

$$\rightsquigarrow \theta(\Delta t) = \begin{bmatrix} 30 \\ 150 \end{bmatrix} + 0 + \frac{1}{2}\begin{bmatrix} -15,1035 \\ 21,6435 \end{bmatrix}\Delta t^2$$

Replace Δt to t we obtained the trajectories

$$\theta(t) = \frac{1}{2}\begin{bmatrix} -15,1035 \\ 21,6435 \end{bmatrix} t^2 + \begin{bmatrix} 30 \\ 150 \end{bmatrix}.$$

$$\Rightarrow \theta_1(t) = -7,55175\, t^2 + 30$$

$$\theta_2(t) = 10,82175\, t^2 + 150$$