Set up ~ Z 4 m 4m 4m

Dynamics at the gute -> (0,0,0) at origin

$$m r_f^{x} = T$$

$$r_f^{x} = 0$$

$$r_f^{x} = -9$$

$$r_f^{x} = -9$$

Initial & final condition.

$$3. \quad \frac{\circ \circ}{\circ} = (\circ, \circ, \circ)$$

$$5. \quad \stackrel{\circ \circ}{Y_f} = \left(\frac{1}{m}, 0, -9 \right)$$

$$\overrightarrow{A}(t) = \overrightarrow{a_5}t^5 + \overrightarrow{a_4}t^4 + \overrightarrow{a_3}t^3 + \cancel{a_4}t^4 + \cancel{a_6}t^7$$

from (1),
$$(z)$$
, (3) \rightarrow $\alpha_0: \gamma_0$, $\alpha_1=\alpha_2=0$

(7) becomes

$$rac{1}{r}(t) = a_{5}t^{5} + a_{4}t^{4} + a_{3}t^{3} + r_{o}$$
 (8)

$$\dot{r}(t) = 5\vec{a}_{5}t^{4} + 4\vec{a}_{4}t^{3} + 3\vec{a}_{3}t^{2}$$
 (9)

$$\psi(t)$$
: $20\vec{a}_5t^3 + 12\vec{a}_4t^2 + 6\vec{a}_3t$ (10)

$$\overrightarrow{\varphi}(t) = 60 \text{ ds } t^2 + 24 \text{ a4}t + 6 \text{ a3}$$
 (11)

for
$$x$$
 and y

Use (8), (10), (11), with (4), (5), (6a)

$$\begin{cases}
t_{5} & t_{5}^{4} & t_{5}^{3} \\
2 \cdot t_{5}^{3} & 12 t_{5}^{2} & 6 t_{5}^{4}
\end{cases}$$

$$\begin{vmatrix}
\lambda_{1} & \lambda_{2} & \lambda_{3} \\
\lambda_{2} & \lambda_{3} & \lambda_{4}
\end{vmatrix} = \begin{vmatrix}
\lambda_{1} & \lambda_{2} & \lambda_{3} \\
\lambda_{2} & \lambda_{3} & \lambda_{4}
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\end{vmatrix} = \begin{vmatrix}
\lambda_{1} & \lambda_{1} & \lambda_{1} & \lambda_{1} & \lambda_{2} & \lambda_{4}
\end{vmatrix} = \begin{vmatrix}$$

$$\begin{bmatrix} ts^5 & ts^4 & ts^3 \end{bmatrix} \begin{bmatrix} as \\ as \end{bmatrix} = \begin{bmatrix} r_f - r_o \\ r_f \end{bmatrix}$$

$$2 \cdot ts^3 \quad 12 \cdot ts^3 \quad 6 \cdot ts \quad a_4 = \begin{bmatrix} r_f - r_o \\ r_f \end{bmatrix}$$

$$6 \cdot ts^2 \quad 4 \cdot ts \quad 6 \quad a_4 = \begin{bmatrix} r_f - r_o \\ r_f \end{bmatrix}$$

$$\begin{bmatrix} ts^5 & ts^4 & ts^3 \end{bmatrix} \begin{bmatrix} a_5 \\ sts^4 & 4ts^2 & 3ts^2 \end{bmatrix} \begin{bmatrix} a_5 \\ a_4 \end{bmatrix} = \begin{bmatrix} \gamma_f - \gamma_o \\ \dot{\gamma}_f \\ \dot{\gamma}_f \\ \dot{\gamma}_f \end{bmatrix}$$

$$2 \circ ts^3 \quad 12 ts^2 \quad 6 ts \end{bmatrix} \begin{bmatrix} a_5 \\ a_4 \\ a_5 \end{bmatrix} = \begin{bmatrix} \gamma_f - \gamma_o \\ \dot{\gamma}_f \\ \dot{\gamma}_f \\ \dot{\gamma}_f \end{bmatrix}$$

$$m\ddot{a} = \frac{1}{1} - m\ddot{g}$$

$$= m(\ddot{a} + \ddot{g})$$