Given that $V(r) = \frac{V_0}{2} \frac{z^2 - s^2/2}{dz}$ in spherical coordinates,

in corresion coordinates, it is written as
$$V(x,y,z) = \frac{V_0}{2} \left(\frac{z^2 - (x^2 + y^2)}{2} \right)$$

$$= -\begin{pmatrix} \frac{2}{32} \\ \frac{2}{32} \end{pmatrix} \begin{pmatrix} \sqrt{3} & \frac{2}{2} - \left(\frac{x^2 - x^2}{2}\right) \\ \frac{2}{32} & \frac{2}{32} \end{pmatrix}$$

$$= \begin{bmatrix} \frac{\sqrt{2}}{2} \left(\frac{X}{4^2} \right) \\ \frac{\sqrt{2}}{2} \left(\frac{X}{4^2} \right) \\ -\frac{\sqrt{2}}{2} \left(\frac{X}{4^2} \right) \end{bmatrix}$$

$$= \frac{9 \sqrt{0}}{2 d^2} \begin{pmatrix} \frac{3}{y} \\ \frac{3}{y} \end{pmatrix} + 9 \begin{pmatrix} \sqrt{3} \\ \sqrt{2} \end{pmatrix} \times \begin{pmatrix} 0 \\ 0 \\ 0 \end{pmatrix}$$

$$= \frac{q V_0}{2d^2} \begin{pmatrix} \frac{3}{3} \\ -2t \end{pmatrix} + q \begin{pmatrix} \frac{1}{3} \\ -2t \end{pmatrix} \times \begin{pmatrix} \frac{1$$

a cooleration,
$$\vec{a} = \frac{q}{M} \frac{V_0}{2d^2} \begin{pmatrix} x \\ y \\ -2z \end{pmatrix} + \frac{q g_0}{m} \begin{pmatrix} V_y \\ -V_z \\ s \end{pmatrix}$$

$$\frac{q}{m} \begin{bmatrix} 80Vy + \frac{V_0}{24} \times \frac{V_0}{24}$$

.. The above equation can be expressed as a system of 3 2nd other ODE $\dot{x} = \frac{9}{12} (B_0 V_1 + \frac{V_0}{2d^2} x)$

By converting, $\dot{x} = Vx$, $\dot{y} = Vy$, $\dot{z} = V_2$, we can convert the 3 2 harder ODE into G 1st order ODE.

(next page)

	z= Vx 22+ are how latings of = 12 = = = (E) which	
	Vx = 9 [B Ky + 1/2 x]	
	Jan	
	ÿ= V4	
	$\dot{y} = \frac{Q}{m} \left[\frac{V_0}{2d^2} y - B_0 V_{\infty} \right]$	- = 3
4		=
	$z = \sqrt{z}$	
	V2 = - 9 [Vo] 7	
	7 3 3	
	Ruggery these equations into the code f function handle	
	where YCI) => Vz	
7	Y(2) ≥ x	
**************************************	E=q E + q √ 2 = E = (a)	, ad
	Y(4) ≥ 3	
	YCS) = Vz (a) (a)	
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