$$mgsin\theta = kac(1 - \frac{L}{\sqrt{x^2 + a^2}})$$

$$- > 1 - \underset{\kappa}{\operatorname{mgsin}\theta} \left(\frac{1}{2}\right) = \frac{L}{\alpha \sqrt{1+\frac{2}{\alpha}}}$$

Let
$$\frac{x}{a} = v$$
, $\frac{\text{mgsin}\theta}{\text{all}} = h$, $\frac{L}{a} = R$

$$-) | - \frac{h}{u} = \frac{R}{\sqrt{1+u^2}}$$

b)

Greyth of 1-h us

R>Rc

Un-stable

Stolk

Stabl

hso

RIKE

state hs o stable

h > 0

Stable

Graphs attached

(cose 1) Three f.b

Push 2

pushing & South of the second of the second

Pull

Cass 2)

push ? (huf stable)

pull (

Case 3)

Ruel