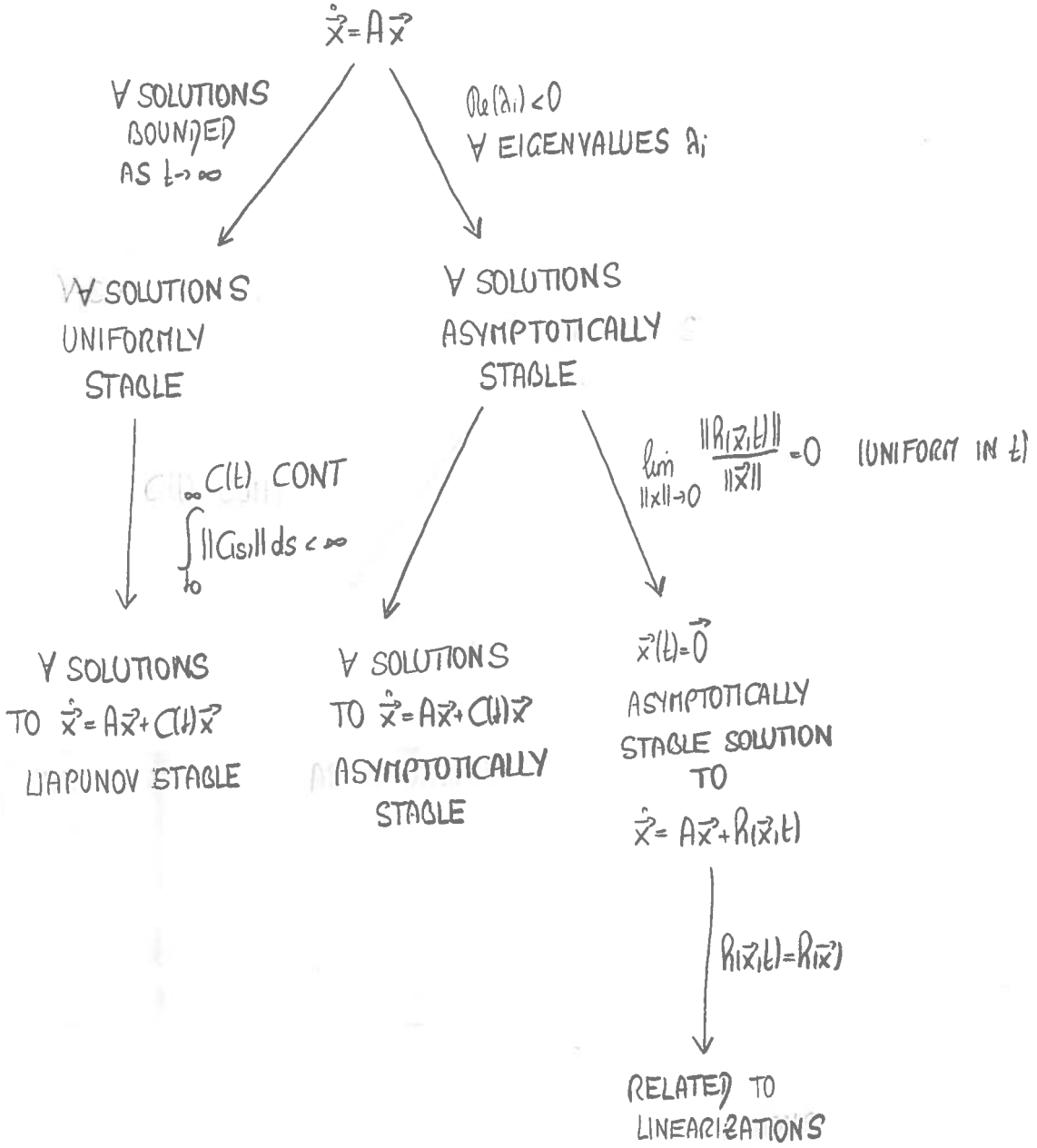

$\dot{\vec{x}} = A\vec{x}$
∀ SOLUTIONS BOUNDED AS $t \to \infty$
$\mathrm{Re}(\lambda_i) < 0$ ∀ EIGENVALUES λ_i
∀ SOLUTIONS UNIFORMLY STABLE
∀ SOLUTIONS ASYMPTOTICALLY STABLE
$C(t)$ CONT
$\int_0^\infty \|G_{s,t}\| ds < \infty$
$\lim_{\|x\| \to 0} \frac{\|R(\vec{x},t)\|}{\|\vec{x}\|} = 0$ (UNIFORM IN t)
∀ SOLUTIONS TO $\dot{\vec{x}} = A\vec{x} + C(t)\vec{x}$ LIAPUNOV STABLE
∀ SOLUTIONS TO $\dot{\vec{x}} = A\vec{x} + C(t)\vec{x}$ ASYMPTOTICALLY STABLE
$\vec{x}(t) = \vec{0}$ ASYMPTOTICALLY STABLE SOLUTION TO $\dot{\vec{x}} = A\vec{x} + R(\vec{x},t)$
$R(\vec{x},t) = R(\vec{x})$
RELATED TO LINEARIZATIONS

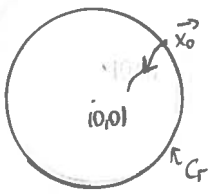
$\dot{x} = f(x,y)$
$\dot{y} = g(x,y)$

$(0,0)$ .. EQUILIBRIUMPOINT

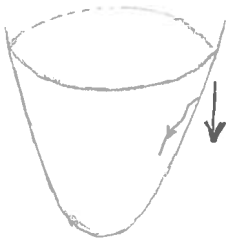
C_r ... CIRCLE RADIUS r
CENTRE $(0,0)$

$\mathcal{H}_{\vec{x_0}}$ ... HALF-PATH STARTING IN $\vec{x_0}$

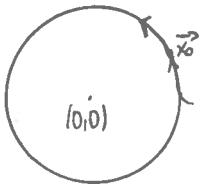
a)



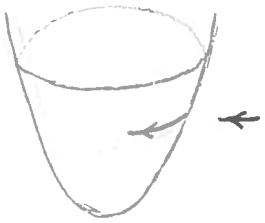
$V(x,y) = x^2+y^2$ ⇝



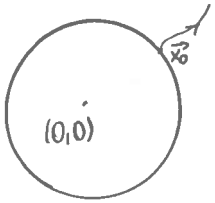
b)



$V(x,y) = x^2+y^2$ ⇝



c)



$V(x,y) = x^2+y^2$ ⇝