

$$\dot{\vec{x}} = f(\vec{x}, t) \rightarrow \vec{x}(t)$$

$$\dot{x} = f(x) \quad f(x) : \text{αυτοαίρετη}$$

$$x(0) \quad x(\delta) : \quad \frac{x(\delta) - x(0)}{\delta} \approx f(x(0))^* \rightarrow \checkmark$$

$$x(\delta) = x(0) + \delta f(x(0))$$

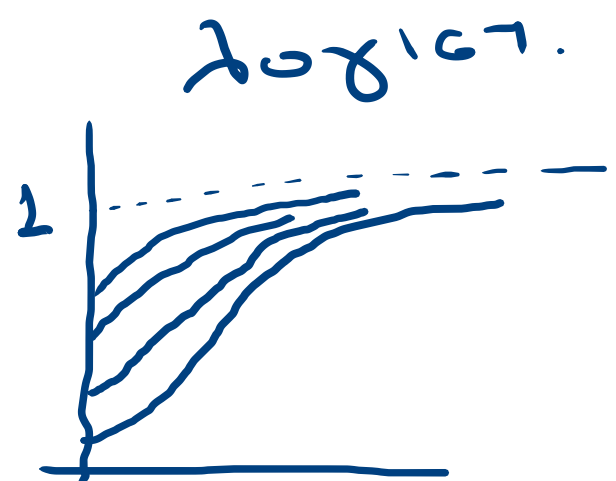
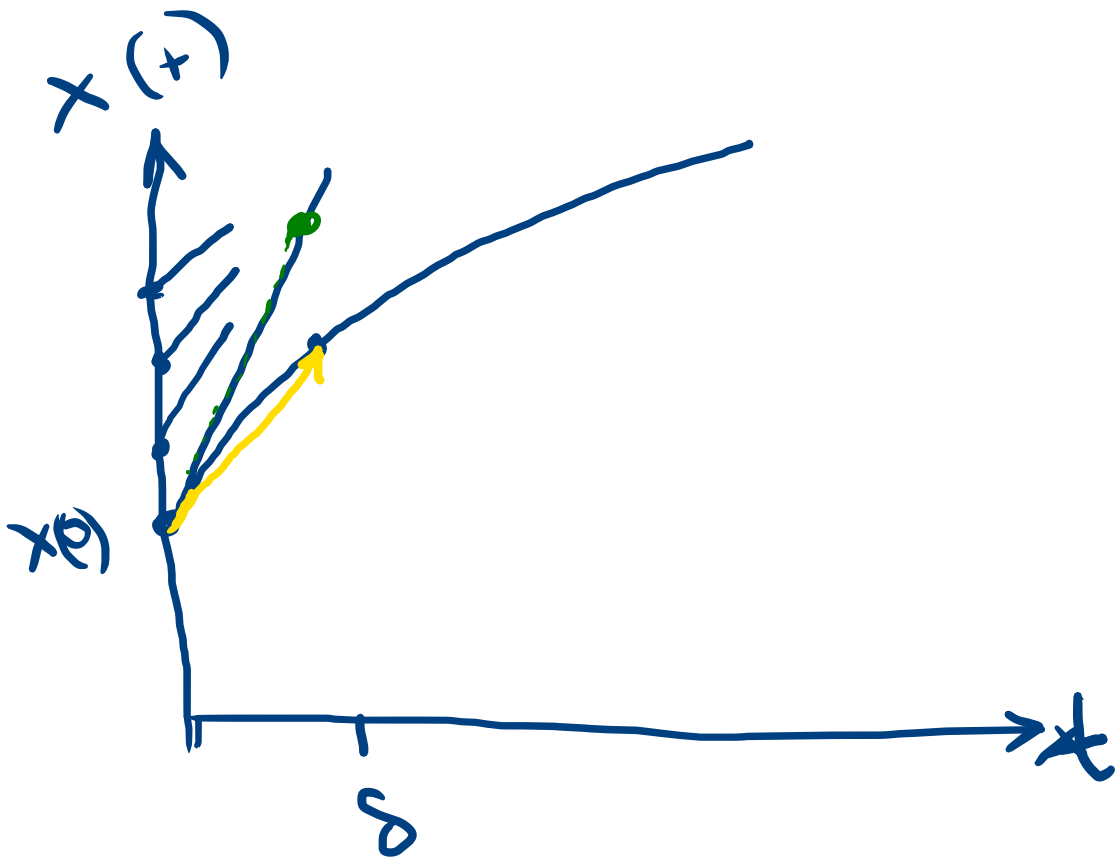
$$x(2\delta) \dots$$

$$x(3\delta) \dots$$

$$f(x(0) - x(\delta))$$

$$f(x(\delta/2))$$

$$\lambda \alpha \nu \sigma \quad \delta^2 : N \delta^2 \sim \frac{T}{\delta} \delta^2$$



$$\dot{x} = f(x)$$

$$x(\delta) = x(0) + \frac{1}{6} (k_1 + 2k_2 + 2k_3 + k_4)$$

$$k_1 = f(x(0)) \delta$$

$$k_2 = f(x(0) + k_1/2) \delta$$

$$k_3 = f(x(0) + k_2/2) \delta$$

$$k_4 = f(x(0) + k_3) \delta$$

Runge-Kutta

μέθοδος

4ης τάξης



λειτουργεί δ^5

$N \delta^5 \sim \frac{T}{\delta} \delta^5$

$\sim \delta^4$