



Differential Equations

Quiz #9

Name:

In the Cauchy-Lipschitz theorem for a problem of type:

$$\begin{cases} X'(t) &= G(t, X(t)) \text{ for } t \in I \\ X(t_0) &= X_0 \dots \end{cases}$$

Question 1. the map G should be

- differentiable ☐
- continuously differentiable (C^1) ☐
- Lipschitz ☐

Question 2.

- as a function of t ☐
- as a function of X ☐
- as a function of (t, X) ☐

Question 3. and then there exists

- at least ☐
- at most ☐
- exactly one ☐
- one cannot tell ☐

Question 4.

- local ☐
- global ☐

solution.