Numerical Analysis Questions & Answers

Question by Student 201327102

Professor, when you taught me about finding convergence of each method, you put $g(y) = \frac{1}{1+y}$ *and expand* $g(y)$ *with TAYLOR SERIES at* $y = 0$ *so you wrote*

$$g(y) = g(0) + (y-0)g'(y) + \frac{y^2}{2}g''(y) + \dots$$

But according to the original form of TAYLOR SERIES is

$$g(y) = g(0) + (y-0)g'(0) + \frac{y^2}{2}g''(0) + \dots$$

Isn't there any wrong in your notation?

Yes, you are right, it should be:

$$g(y) = g(0) + (y-0)g'(0) + \frac{y^2}{2}g''(0) + \dots$$

If I wrote otherwise on the board, then this is a mistake obviously so please change your notes in consequence. This is a good observation, I'll give you 2 points bonus boost.

Question by Student 201527110

Professor, I wonder 'curve fitting and interporation'assignment is due to 'thursday' or 15th. In the assignment page, you announced like Thursday 15th Nov. But 15th is tuesday as you know.

Oops, it's due on Thursday November 17th. Thanks for correcting this. I'll give you 2 points bonus boost.

Question by Student 201527110

Professor, I have a question during studing Cubic Spline boundary conditions. For define $f_i'(x) = \alpha_L$ *and* $f_i'(x_{i+1}) = \alpha_R$, α_L *and* α_R *in here, are user-specified constant. Is taht means it could be any arbitary number? Or do I have to define exact real numbers for that?*

Well, user-specified constants are numbers that are specified by you, the user of the code. Of course, such could be any real number you wish to specify..

Question by Student 201527142

Professor, in assignment #6, I found you didn't define n, the number of data points, before writing function f. Is it necessary, isn't it?

Well, the number of data points N can be obtained from the data shown in the tables..

Question by Student 201327102

Professor, I think I found wrong notation in Assignment 6# Question #2 reminder. In reminder, last row, you told interval of i *to* $2 \leq i \leq N$*. But, in my note, you taught us that interval of* i *is* $2 \leq i \leq N-1$ *Isn't it necessary to revise that point?*

In the reminder, last row, it is written $2 \leq i \leq N-1$, not $2 \leq i \leq N$..

Question by Student 201327107

Professor, I have question about Big O notation. Sometimes you write

$(b-a)O(\delta(x^2))$

but sometimes you write just

$O(\delta(x^2))$

except $(b-a)$*. Do these two have same meaning?*

I'm not sure what your question is.. The big O notation $O(\Delta x^2)$ means that the average truncation error leading term scales with Δx^2, that is all. Your question is not clear and is not well typeset either. I'll give you 0.5 point bonus boost only.