

Numerical Analysis Questions & Answers

Question by Student 201427122

professor, I think A Newton polynomial of Question #3 is (C), not (B). And at Question #1,

$$y = C_1 + C_2\sqrt{x} + C_3x$$

, I use algorism by Least square - combination of functions. If I use algorism by just Least square, Is it same correct algorism?

Your question is too messy, I can not read it. Don't use a capital letter to start a word within a sentence except for names or for "I". Always use a capital letter when starting a sentence. Check your spelling. After you correct those, I'll answer your question.

Question by Student 201427122

Professor, I think that A newton polynomial of Question #3 is not (B) but (C). And at Question #1

$$y = C_1 + C_2\sqrt{x} + C_3x,$$

I use algorism by Least square - combination of functions. I do like this:

$$f_1(x_1) = 1, f_2(x_2) = \sqrt{x}, f_3(x_3) = x.$$

If I use algorism by just Least square, Is it same correct algorism?

Yes, this seems OK. You're on the right track. You need to further improve your spelling and orthograph thus.

Question by Student 201529190

Dear professor, in Assignment #6 Question#3 .What mean is "multidimensional piecewise-linear interpolation" ? Is it use "multidimensional interpolation" solving ideas ,but use piecewise-linear method?

Yes exactly!

Question by Student 201529190

Dear professor, in Assignment #6 Question#3 .answer should be -0.9,0.7333.

Given answer that the order is reversed

True. It's fixed now. 1 point bonus.

Question by Student 201529193

professor, when we use cubic spline to interpolate $n+1$ points $(x_0, y_0), (x_1, y_1), \dots, (x_n, y_n)$, we can get n piecewise cubic polynomials for n intervals. However, why should we calculate $n+1$ b in the matrix?

Because b is needed on the boundary nodes as well as on the inner nodes to close the system. Thus, you need N b , not $(N - 1 = n)$ b .

Question by Student 201700278

Dear professor, for the I_i equation discussed in the end of the class today, I think it should be $\frac{\Delta x_i^3}{24} f''(x_m)$ instead of $\frac{\Delta x_i^3}{3} f''(x_m)$ as you have written in class.

Yes, this is quite possible. You'll need to prove this in the next assignment I think.