

~忘~

OK, what's our status going for calculus? "Do you remember? Hi, leader. "I said to leader of this class. 「班代，我們上星期上到哪裡啊？」「我們上星期在複習期中考的考試題目。」班代回著「師者」的問題。Oh! I got it. Yes, I remember that we checked something about your middle-exam. To be honest, that's your time to experience the mathematics exam in the school. All things are fresh, in particular, in this course, calculus. I hope that all of you can be specials when you compare to your classmates in senior-high school. I believe that your lives are so different from each other, due to you are here, CPU (Central Police University), Do you know "CPI". It is also the full-name of Central Processing Unit. But the same short-name, and so that different meaning they are. Ok, let's talk about the exam-sheet with you calculus. How do you feel about it? Is it easy, or hard, or acceptable? You know, mathematics learning, the logic training is the key-importance of this program. Don't worry about the English listening and writing, due to the symbols, are the key language in the English presentation. If you are familiar with some commonly used symbols, all are done for the English learning besides the logic-training. That's why I want to offer you the sheet, all in English for problems. It doesn't matter for your answer in English or Chinese. I just hope you could get more familiar than even before, every time. After the middle-exam, we are going to move the world of "differentiation". Do you remember that the story of「牛頓」and「萊布尼茲」. I talked to you at in the beginning of this semester. The twp-guy is the key-person for the development of calculus. One is the representation of Britain. The other one is for Euro-system. How about the relative symbols, for example, "f", " $\frac{dy}{dx}$ ", are created by「萊布尼茲」. With the symbols, the learning for calculus is then easy and going fast. Now let's check something formulae with the "differentiation".

I. polynomial type, $f(x) = a_n x^n + a_{n-1} x^{n-1} + \dots + a_1 x + a_0$, then

$$\frac{df(x)}{dx} = n a_n x^{n-1} + (n-1) a_{n-1} x^{n-2} + \dots + a_1 + 0.$$

II. trigonometric function, let $f_1(x) = \sin x, f_2(x) = \cos x, f_3(x) = \tan x, \dots$, then

$$\frac{d f_1(x)}{dx} = \cos x, \quad \frac{d f_2(x)}{dx} = -\sin x, \quad \frac{d f_3(x)}{dx} = \tan x \cdot \sec x$$

After I show all the formulae, we will take a look some example to illustrate the formulae. In mathematics learning, the only rule is to make more practices if you want to keep more impressive in the program. Mathematics is different from the learning of social-science. The symbols are basically simple, to make you learn it easy, but the total understanding of true logic-procedure in a question proof is its key-requirement. Just make more practice if you want to get credits for yourself. OK, are you ok, so far? As I talked to you in the beginning of the fall-semester, you will own a honeymoon vocation before the middle-exam. Now the time is up. From now on, you will go into the English-program in this course learning of calculus. The same thing, I showed you before, “HAKUNA MATATA”—“Don’t worry, be happy”.

「學習」不就是這一回事，想說著，一回生，兩回熟，三回可炒作。自好些年前，已開始做這樣的事，不是課程依規定一定得要如此做。然能給學生多些機會，與國際語言接軌，課程裡，除品味基礎教學精華外，也有著科技英文的身影。勉勵著學子，不怕生，不怕糗。語言只是工具，不求其美，只求盡其在我。英文再好，也好不過老外。科技裡，要的是溝通，要得是知識的傳播，其他的，何必庸人自擾呢！

~秋風/王旭正

<附註>

「**學**習」是個「忘」，當 post 在網站時，即已擬好了一個故事。一說著太極武當鼻祖張三豐，在武俠世界裡，告訴徒孫張無忌的一則學藝典故。耍劍，習拳，第一次，要熟記劍譜、拳法；第二次要依譜法操練，第三次要精益求精，第 n 次後，要通透精髓。再來，就歸零，忘了！忘的乾淨，不再有印象，回歸自然。當再次出招，已成自然性身心形合一。無形中揮演出劍拳原形，不再有譜法，而是氣，精，力，道，的合一境界，不正是學習的最高境界「忘」。，學習如此，語言如此，心性亦該如此的「空」與「忘」！

~秋風~