Hello guys, this is the second recitation class for MATLAB session of the Introduction to linear algebra.

Before we begin, what this video covers is an important part of last week's materials. Other contents are not shown in the video, but please learn by yourself and by asking questions.

Let’s start with the exercise document. I think some of you have already noticed that this document is just a part of the textbook which is contained in the introduction page. But not exactly same format. This weekly exercise documents are re-written by mark-down format and it contains one-click copiable code blocks. Thus, you should very easy to read and test the code of textbook very quickly.

The first chapter is ~~~, and that is actually not a lot of contents in this chapter. The most important concept of this chapter is a new formation of matrix, the reduced row echelon form. To make the rref, we should do the gauss-jordan elimination process, but in MATLAB we can use the command rref. If you give a matrix A as an input of the rref, then it outputs a matrix, let’s say it R, and the R is the rref of the input matrix A. Very simple, right?

Just make any matrix A, and then input it to the command, then you get the rref of the matrix A.

But, if you know other programming language, then you know that not all commands give only one output. Some of them give several outputs and also the rref is.

Actually it gives totally two outputs, the one if rref of input matrix, as we saw, and the other one is pivot columns of the input matrix. I this you may not know what the pivot column is, but in this statge, you just need to know that these are the columns in which the leading 1's of the rref are appeared.

So this exercise 2.1 means find rref and pivot columns of the matrix A by using the MATLAB command rref.

Okay, by knowing this, you can learn the rest of the chapter on your own, move on the naxt chapter.

Chapter 3 is ~~~. Here, you should know about inv command and the difference of ordinary operations between the dot operations.

The inv command is literally find the inverse of given matrix. It takes only one matrix, and gives only one output. All we know very well-known other expression that means inverse in the math, that is power -1 of something. For example, if you write A^-1, then it means the inverse of the A. It works in the MATLAB. The result of A^-1 is exactly the same as the result of inv(A). And similarly, mathematical matrix operations like +, - and \* also work in the MATLAB. There are no division, because the division operation is not defined in matrices. This is ordinary operations. Then, what is dot operations? The dot means “element wise”. So in the dot operations, ./ is defined. These element wise operations are useful to describe functions and equations in MATLB. For that, please read the assignments 1 and 2 carefully.

Okay everything is done, thank you for listening.