Limit of a sequence:

 means that for every there exist m > 0 such that if n > m then < .

Here m and n are natural numbers (N), and is a real number.

There are 3 great limits of calculus for sequences which we discussed in our calculus class in September of 2018. See the notes and the pictures of the whiteboard.

1.

2.

3. ,

https://en.wikipedia.org/wiki/Limit\_of\_a\_sequence

Limit of a function:

 means that for every > 0 there exist such that if < < .

Here and are real numbers.

There are 2 great limits of calculus for functions, they are similar to the first 2 great limits for sequences.

1.

2.

https://en.wikipedia.org/wiki/Limit\_of\_a\_function

We cannot divide by zero because this operation is undefined in mathematics.

There are some indeterminate forms such as , , 00, , etc.

https://en.wikipedia.org/wiki/Indeterminate\_form

We must solve these indeterminate forms, which means finding the limit, often using algebra or calculus.

Limits can be solved by substation, elimination, and using L’Hopital rule.

https://en.wikipedia.org/wiki/L%27H%C3%B4pital%27s\_rule

Continuity of function:

Continuity of function at a point p means that .

https://en.wikipedia.org/wiki/Continuous\_function

Creative assignments and project:

Try to do creative assignments about predictions, etc. Choose the topic for your project and start doing your project.

Quantum computer and quantum teleportation:

Some of you are interested in hacking and asking about quantum computer and quantum teleportation but these are very complex topics. You can do your project about that. We may try to discuss them in very general words later. I may even ask you to use quantum computer. Now you can read about these topics.

https://en.wikipedia.org/wiki/Quantum\_computing

https://en.wikipedia.org/wiki/Quantum\_teleportation

Previous notes are here:

https://calculus12s.weebly.com/uploads/2/5/3/9/25393482/notes\_in\_calculus\_24sep2018.docx