

A Passion for Mathematics of a poor genius

[Jaeyong Park]

MATH-199 Math/Stat Seminar

Assignment # 6(The second L^AT_EX assignment)

18th November, 2019

When I was in a high school, my teacher was a retired mathematics professor who wanted to teach high school student and to had more time in researching. I used to go to his office and grab some coffee or had a conversation with him. And one day, he was struggling with some article and told me that if the Abel lived longer, his brain would melt. The problem that hadn't solved for more than 200 years was solved by a young mathematician so if he lived like a Gauss, the mathematics will be more improved by him and remain the more complicated questions. That was the first time heard about the Abel. Niels Henrik Abel (1802 –1829) was a Norwegian mathematician who made pioneering contributions in a variety of fields. His most famous single result is the first complete proof demonstrating the impossibility of solving the general equation more than 5th degree. This is called quintic. This question was one of the outstanding open problems of his day, and had been unresolved for over 250 years. He was also an innovator in the field of elliptic functions, discoverer of Abelian functions. Also, we can discover his name in group. In abstract algebra, this is a group in which the result of applying the group operation to two group elements does not depend on the order in which they are written. He made his discoveries while living in poverty and died at the age of 26 from tuberculosis.

1 Early life and the Good Teacher

Neils Henrik Abel was born on 5 August 1802 in Nedstrand, Norway. His father was a pastor who had a degree in theology and philosophy and served

as pastor at Finnøy. Also Niels's grandfather was also a pastor. Her mother, Marie Simonsen was a beautiful woman and she enjoyed arranging balls or social gatherings. Much suggests she was early on an alcoholic and took little interest in the upbringing of the children so Abel didn't care by her mother. At 1815, Abel went to the cathedral school and he met his teacher, Bernt Michael Holmboe, and Holmboe recognized Abel to become a great mathematician. He taught Abel with private lesson and suggested to read the original version of books written by the great mathematicians. He began to focus on mathematics after he met Holmboe. Holmboe gave Abel advanced task and encouraged him.

At that time, Abel's father passed away, his family suffer from poverty and Abel's circumstances almost made him quit the study. But with Holmboe's help, Abel received assist from the government and Royal Frederick University. It took only a year graduated from university. Abel still had a relationship with Holmboe. Here is some funny story about teacher and student. Abel sent letter to Holmboe and wrote the $\sqrt[3]{6064321219}$ which is 1823.5908275. 1823 is the year and 0.5908275365 = 215.652 is the 216th day so the time when he wrote the letter was August 4 1823.