**Topic:** Paciolo, Ferro, Fior, Fontana

**Notes on Topic:** Europe had finally awaken from the slumber of the middle ages  
The 15th century was proving to be very productive  
The printing press invented in 1450 be Johannes Gutenberg  
Universities at Bologna, Paris, Oxford were becoming legitimate centers of education   
Raphael and Michelangelo were beginning their artistic careers  
Christopher Columbus had travelled across the Atlantic  
  
Europe was also on great brinks in mathematics  
  
In the year 1494, the italian **Luca Paciolo** released *Summa De Arithmetica*  
Paciolo emphasized the solving of linear and quadratic equations  
He used *co* to denote an unknown quantity that wanted to be solved, *co* short for *cosa* meaning “thing”  
This was the first step in the symbolic algebra we are used to today  
Paciolo also tried to tackle solving cubic equations, he had decided that this was impossible in the existing world of mathematics  
  
Paciolo’s set the stage for the next great theorem  
  
The next mathematician, **Scipione del Ferro** (1465-1526)  
He came up with a formula that solved the “depressed cube” meaning a cubic equation with no second degree term also called *“cubic and cosa equals number”*  
Ferro’s discovery was a large algebraic advancement although he kept his findings a complete secret!  
In this time, scholarly challenges were the way to show triumph over one’s opponent, and to humiliate and cause disaster to one’s career  
Ferro felt this major discovery was a powerful weapon   
“Should an opponent appear with a list of problems to be solved, del Ferro could counter with a list of depressed cubics”  
Only upon his deathbed did he pass the secret solutions to his student Antonio Fior  
  
**Antonio Fior**  
A no doubt lesser mathematician than his mentor  
He took his new weapon and went on a rampage of challenges  
In 1535 he leveled a challenge against the Brescian scholar Niccolo Fontana

**Niccolo Fontana**  
During a French attack on his hometown, as a boy, a soldier slashed his face with a sword  
Legend has it that he only survived because a dog licked his gash  
The dog, though, could not save his speech  
He could no longer speak with any clarity, thus he was nicknamed Tartaglia- the stammerer

Fontana was nonetheless a gifted mathematician -- boasting that he could solve cubics missing their linear term  
When the challenge between him and Fior arrived, Fontana put together a list of 30 problems covering various topics of mathematics, while Fior gave him a list of 30 depressed cubics  
Fontana began round-the-clock attack on the list of cubics, then on the night of February 13, 1535 Fontana discovered the secret and was able to solve all thirty problems with ease, while Fior submitted sub-par work and eventually lost the challenge   
Fontana was meant to have 30 banquets provided by Fior, but Fontana relieved his opponent of his commitment   
Fior quietly faded away

**Additional Suggested Reading**: None

**Assignment:** None