[Episode 1 - Maria Gaetana Agnesi Transcript]

Hello, everyone. My name is Allison Day and I'm going to be speaking a little bit about Maria Agnesi, an early Italian mathematician who made groundbreaking steps during her time for women in math. But before that, I'd like to give you a little bit of background on what was going on historically leading up to Maria's time. So sometime in the mid-14th century, there was an influx of scholars into the Italian peninsula that sparked what we know of today as the Renaissance: a cultural, artistic, and scientific movement that grew across Europe all the way through the 17th century. The Renaissance brought forth many new ideas, including change in the status of women who, up until this point, had not been particularly highlighted throughout history when it came to academics. Overall, there was still a lack of acknowledgement and appreciation for what women could bring to the table. However, in Italy, things were changing, and it was there where the Renaissance originated that some Italian women were able to step out into the spotlight of the academic world as a more open attitude toward women in the sciences emerged.

Enter Maria Agnesi. Maria Gaetana Agnesi was born in Milan on May 16th in 1728 to a wealthy and literate family with a mathematics professor for a father. Maria was declared a child prodigy early on, and her parents made sure that she received a thorough and proper education. By the age of 9, Maria had mastered many languages including French, Latin, Greek, and Hebrew, and it was around this time that she gave a speech written and spoken in Latin defending a woman's right to a higher education, something that she continued to be passionate about throughout her life.

As a teenager, Maria devoted her time to her studies, often participating in assemblies and discussions of distinguished guests and intellectuals that were hosted in the Agnesi home and put together by her father. While it is undoubtedly clear that many were impressed with Maria's abilities, such as her versatility on diverse subjects, and her well-spoken arguments, Maria herself was not content putting on such displays that went against her shy and quiet nature, and when she was 20 years old, she requested of her father that he allow her to enter a covenant where she would be at peace studying and devoting her life to helping the poor. Her father, however, denied this request, and Maria continued her studies in mathematics.

It was around this time that Maria began her most renowned work *Instituzioni analitiche,* or *Analytical Institutions*, which focused on differential and integral calculus. It was rumored that she began writing the book as a text for her brothers, but turned into a more serious work which took ten

years to complete. When her work was finally published in 1748, it was viewed as sensational. At the time, it was one of the most important mathematical texts produced by a woman, and was so popular that it was translated into many languages and used as a textbook around the world. Agnesi may be most famously known from the curve called the "witch of Agnesi," which was a particular curve originally studied by Fermat that she included in *Analytical Institutions*. The name witch of Agnesi actually came about from a mistranslation from Italian to English. However, the name stuck and is one of her more familiar accomplishments.

At the peak of her mathematical career, not long after the publication of her book, she was elected as a professor at the Bologna Academy of Sciences. However, there is debate on whether she actually taught. During this time, her father was ill, and by 1752 when her father passed away, she had already devoted her life to work with charity. She spent the rest of her life helping the poor and homeless as well as taking care of ill and dying women, up until her own death in 1799. While her mathematical career was short-lived, Maria Agnesi's contributions were not only significant to the mathematical world, but also monumental steps for women everywhere. She was the first woman to write such a significant and widely praised mathematics text, and also the first woman to become a professor at a university paving the way for women everywhere to become more involved in mathematics.