Blaise Pascal: The Most Notable Mathematicians Throughout History

Blaise Pascal has affected every person's life, even if one may not know it. Though often unnoticed by people every day, his accomplishments have changed the world. With a drive to help make his father's life simpler, and a prodigal understanding of math, Pascal has become one of the most notable mathematicians throughout history. Pascal invented the first calculator, the basis of the Theory of Probability, discovered Conic Sections the mystic hexagram, and even wrote religious works. Blaise Pascal not only changed the game in the mathematical world, but he also made many significant scientific discoveries. Pascal was a man of many gifts, and his prodigal understanding of math and how the world works has shaped the basis of many subjects today.

Blaise Pascal was born on June 16, 1623 in Clermont-Ferrand, France to Etienne Pascal and Antoinette Begon. He had two sisters, Jacqueline Pascal and Gilberte Pascal. His mother died when he was a toddler (Biography.com). Since his mother passed when he was so young, Pascal had a family-centered childhood. He and his siblings never went to a public school, they were homeschooled throughout their youth by their father, a tax collector (Biography.com). His education consisted mostly of learning languages, instead of math and science. He learned more about the Greek and Latin languages and stuck to a more simple curriculum. If he had been taught math and sciences more, he may have pushed away more of the core subjects, and focused his efforts more on the unknown. It is stated that his father felt that subjects like geometry would be "too enticing and attractive." (Noteablebiographies.com). Even though he was prodigal as a kid, he was just like any other kid. Since he was told he was not allowed to do math, that made him want to study it even more (Notablebiographies.com). As a closeted learner, Pascal had to secretly learn geometry and everything that came along with it. Since he did not know the proper terms for the subjects in geometry, he made up his own terms and learned it in his own unique way (Biography.com). His education never went further than his homeschooling. Even without a higher education, he went on to create new theorems and make several scientific discoveries.

As an early adult, Pascal devoted almost all of his time to his studies. He never married or had children. Before the age of sixteen, Pascal developed his first theorem, Pascal's Theorem. Pascal's Theorem states, "If a hexagram is inscribed in a conic, then the three points at which the pairs of opposite sides meet, lie on a straight line." (Bogomolny). This theorem is also known as the Mystic Hexagram. Although his theorem was never proven, it was backed with the research behind Desaurges's work (Chew). At the ripe age of nineteen, Pascal invented the first adding machine, the Pascaline Calculator. Pascal originally invented the adding machine to help make his father's job as a tax-collector easier (Biography.com). The machine could only add and subtract, but for a person who had to constantly add and subtract all day by hand, this made the job significantly easier (Freiberger and Swaine). Although calculators are one of the most commonly used devices today in society, this is not an invention that Pascal is most famous for. Pascal is most noteworthy for his triangle, Pascal's Triangle. Pascal's Triangle is a neat way of solving arithmetic problems. Davidson states that, "As we move into the triangle, every number turns out to be the sum of the number in the square immediately above it." (Davidson, 30). The triangle has many purposes. Pascal's original intention for it is simply just

to solve problems in a new way. Another common use for the triangle is to “determine how many selections of two or more different factors can be made from the group.” (Davidson, 31). Pascal used this triangle to help Fermat formulate the basis of the Theory of Probability. Fermat and Pascal used former knowledge and new mathematical techniques to learn more about probability. They used the triangle to generate numbers and possible outcomes (Storyofmathematics.com). They came to the conclusion that it “was the idea of equally probable outcomes, that the probability of something occurring could be computed by enumerating the number of equally likely ways it could occur, and dividing this by the total number of possible outcomes of the given situation.” (Storyofmathematics.com). This triangle helped to revolutionize all subject of math.

Although Pascal made many waves in the mathematical world, he is also a scientific pioneer. After learning about the experiments by Evangelista Torricelli regarding the barometer, vacuums, and atmospheric pressure, Pascal had to run similar experiments to test them himself (Anirudh, and Learnodo Newtonic). After this experiment and many others, Pascal came to many conclusions about atmospheric pressure. He stated that, “it was indeed a vacuum above the column of liquid in the barometer tube” (Anirudh, and Learnodo Newtonic). This further backed up Torricelli’s theory. Pascal also did much research about atmospheric pressure and its relationship with height. In science, Pascal is most famous for Pascal’s Law. Pascal’s Law states that “pressure applied to a confined liquid is transmitted undiminished through the liquid in all directions regardless of the area to which the pressure is applied.” (Anirudh, and Learnodo Newtonic). Pascal’s Law helped shape the study of hydro statistics still to this day.

Pascal dedicated countless years to studying math and science, but toward the end of his life, he gave up those studies to focus on religion. The Pascal’s were never a hugely religious family, but after the passing of their father, Pascal and his sister had enlightenment. His sister, Jacqueline gave up her worldly life for a strictly religious one, she joined a Jansenist convent in Port Royal, where she lived out the rest of her days (Notablebiographies.com). Pascal later stopped having a secular career and joined his sister at the convent (Notablebbiographies.com). Pascal then wrote many theological works, the most notable being The Provincial Letters and the Pensees. Not only did he influence the math and science world, he also made an impact on many other theologians. Blaise Pascal died on August 19, 1662 due to stomach cancer. He may have passed hundreds of years ago, but his memory still lives on today.

Pascal had many accomplishments throughout his lifetime. As a man with no formal education, he made discoveries not even the finest scholars could fathom. Many of Pascal’s inventions and theories are still relevant today. Every person will use a calculator in their lifetime, and without Pascal, a simple luxury that everyone has may not be existent. Pascal made advances in multiple subjects in only a few years. Even after a religious conversion, Pascal never stopped researching and writing. There is no doubt that Blaise Pascal forever changed the world with his mathematical, scientific, and religious findings.

Works Cited

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