

## Rene Descartes, He Started a Math Revolution

French Philosopher and Mathematician

Born La-Haye-Descartes, France, March 31, 1596, Died: Stockholm, Sweden, Feb. 11, 1650

Descartes' mother died when he was two years old, and he seemed to have inherited her ill health. He was allowed to stay in bed in the mornings as long as he wanted, and as he was a brilliant student, his schools allowed him to do this as well. He carried on this habit for most of his life. He also never married, so he had no family responsibilities.

After serving a few years in the French army, he settled in Holland, where he stayed until 1649 until succumbing to a strange request. The Swedish ruler, Christina, asked him to come to her court and serve as her own personal tutor. She insisted on having him available at 5:00 AM three times a week to instruct her in philosophy and mathematics. Going to the castle three times a week in the cold of a Swedish winter caused Descartes to contract pneumonia. He died before the winter was over.

As a philosopher, Descartes coined the phrase, "Cogito, ergo sum", or as we know it, "I think, therefore I am". As a mathematician his contributions were many. His most well known is the ability to plot a point on a graph, which lead to plotting lines and curves. The cross-hairs of the x-y axes is now named after him as the "Cartesian Plane". The story goes he came to this conclusion of plotting by watching a spider, or a fly, move along the ceiling. He looked at the movement as an enemy battalion on a battlefield and he wondered how he could send information to another commander as to the position, and the movement, of this "battalion".

Although latitude and longitude were well known, the plotting of a series of points that solved an equation was the big breakthrough. He thus married Algebra and Geometry, and started a branch of Mathematics we now call Analytic Geometry. Later on we will be doing sessions on graphing points, lines and curves on the [www.mathhiker.com](http://www.mathhiker.com) website.

Descartes also was the first to use letters near the beginning of the alphabet (a, b, c,..) as constants and those near the end of the alphabet (x, y, z) as variables. He also introduced the idea of exponents and the square root sign.

The information for this short biography is from Isaac Asimov's *Biographical Encyclopedia of Science & Technology*. By the way, this wonderful resource was a birthday present from my father in 1976. At that time I would not have known that I would still be making great use of it 33 years later!