Spriographs
Spring 2017
Math-M330

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March 9, 2017

Introduction to Spriographs

A *spriograph*, also known as a *hypotrochoid*, is a shape formed by moving a circle inside of another circle. One circle is in a fixed position and does not move, while the other circle is not fixed and moves around the interior of the other circle. We can think of these two entities as the *fixed wheel* and the *moving wheel*. A shape is formed by selecting a point somewhere on the moving wheel and tracing a line at that location on the moving wheel as it goes about its motion rotating within the fixed wheel. One might think of it as if you were to place a pencil at that location in the moving wheel. We will first discuss all of the important components of both wheels, then move onto examining the characteristics of different spriographs.

There are a few important variables related to the creation of spirographs. There is the radius of the fixed wheel, the radius of the moving wheel, and the location of where we will trace a line from on the moving wheel. We may also be interested in the point of contact between the moving wheel and the fixed wheel. If we change these variables, then we will get different spriographs each time. Figures 1, 2, and 3 below show examples of a spirograph being formed over multiple completed *revolutions* around the fixed wheel.