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Research Paper Outline

Thesis: Archimedes, a brilliant mathematician, mainly through his work on infinitesimals, influenced Johannes Kepler, which led to the development of calculus.

1. Archimedes background and examples of brilliance
   1. Early years and possible schooling
   2. Myths/stories about his life – gold crown; how he died
   3. Defense of Syracuse against the Roman siege
   4. Areas of inquiry
2. Archimedes dealing with the infinite
   1. The *Method*
3. Archimedes’ *Quadrature of the Parabola, Sphere and Cylinder, Spiral Lines,* and *Conoids and Spheroids*
4. Kepler’s background
   1. Early years and schooling
   2. Adult life
   3. Best remembered for
5. Contribution to development of calculus
   1. Modified the procedures of Archimedes
   2. Contributed to development of infinitesimal techniques for calculating areas and volumes
   3. Finding maximum and minimum of areas/volumes