

Calculating area and volumes

- Early Greek Geometry by **Thales** (600 B.C.) and the **Pythagorean** school (6th century B.C)
- **Hippocrates of Chios** mid-5th century B.C. a first result on areas of curved shapes. (Squaring/quadrature of the lune) Tried the quadrature of the circle.
- 5th century B.C. **Democritus** discovered the volume of the cone is $\frac{1}{3}$ of the encompassing cylinder using indivisibles.
- **Archimedes** (287 -212 B.C).
 - Used the method of exhaustion invented by Euxodus (408-355 BC) to calculate area. This method is in book XII of Euclid.
 - In *On the sphere and cylinder* he calculated the area of a sphere relative to a cylinder.
 - In *Quadrature of the parabola* Archimedes finds the area of a segment of a parabola cut off by any chord.
 - In *The method* (lost until 1899) he gives a physical motivation for his geometric results using infinitesimals, but does not consider them as rigorous.