

Calculating area and volumes

- **Johannes Kepler** (1571-1630) worked on planetary motions and worked on integration in order to find the area of a segment of an ellipse. Also derived a formula to measure the volume of wine casks.
- **Pierre de Fermat** (1601-1665), Gilles Personne **de Roberval** (1602-1675) and Bonaventura **Cavalieri** (1598-1647). Used indivisibles to obtain new results for integration. Cavalieri wrote *Geometria indivisibilis continuorum nova* (1635)
 - Roberval wrote *Traité des indivisibles*. He computed the definite integral of $\sin x$, worked on the cycloid and computed the arc length of a spiral. He is important for his discoveries on plane curves and for his method for drawing the tangent to a curve
 - Fermat also worked on tangents as did Rene Descartes (1596-1650). Fermat also gave criteria to find maxima and minima.
- Also Evangelista Torricelli (1608-1647), Blaise Pascal (1623-1662), René Descartes (1596-1650) and John Wallis (1616-1703) contributed to the beginning of analysis.