BO1.1. History of Mathematics

Sheet 2 — MT25

Reading for weeks 3 and 4:

- Stedall, Chapters 5, 8–11
- Katz, Chapters 16 and 17

(On Newton's *Principia*, the initial applications of calculus, and the emerging notion of a 'function', power series, limits and continuity, and 18th century analysis.)

Essay to be submitted by 12 noon on Monday of week 4:

It has sometimes been claimed that Fermat should be considered as one of the founders of the calculus. More recently, Katz has attributed the Fundamental Theorem of Calculus to Gregory and Barrow. What arguments can be given for or against such claims? What does it mean to say that Newton or Leibniz 'discovered' the calculus? Does being 'first' matter? (1,000 words)

Discussion topic to be prepared for the class in week 4:

Read the derivation of d'Alembert's wave equation (1747) (*Mathematics emerging*, §10.1.2). Please be prepared to discuss the background to this extract, its technical content, and its place within our story.

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