

Cambridge University Press

978-1-108-05058-6 - Oeuvres complètes de Niels Henrik Abel: Nouvelle édition: Volume 2

Edited by L. Sylow and S. Lie

Frontmatter

[More information](#)

CAMBRIDGE LIBRARY COLLECTION

Books of enduring scholarly value

Mathematics

From its pre-historic roots in simple counting to the algorithms powering modern desktop computers, from the genius of Archimedes to the genius of Einstein, advances in mathematical understanding and numerical techniques have been directly responsible for creating the modern world as we know it. This series will provide a library of the most influential publications and writers on mathematics in its broadest sense. As such, it will show not only the deep roots from which modern science and technology have grown, but also the astonishing breadth of application of mathematical techniques in the humanities and social sciences, and in everyday life.

Oeuvres complètes de Niels Henrik Abel

Niels Henrik Abel (1802–29) was one of the most prominent mathematicians in the first half of the nineteenth century. His pioneering work in diverse areas such as algebra, analysis, geometry and mechanics has made the adjective ‘abelian’ a commonplace in mathematical writing. These collected works, first published in two volumes in 1881 after careful preparation by the mathematicians Ludwig Sylow (1832–1918) and Sophus Lie (1842–99), contain some of the pillars of mathematical history. Volume 2 contains additional articles on elliptic functions and infinite series. It also includes extracts from Abel’s letters, as well as detailed notes and commentary by Sylow and Lie on Abel’s pioneering work.

Cambridge University Press

978-1-108-05058-6 - Oeuvres complètes de Niels Henrik Abel: Nouvelle édition: Volume 2

Edited by L. Sylow and S. Lie

Frontmatter

[More information](#)

Cambridge University Press has long been a pioneer in the reissuing of out-of-print titles from its own backlist, producing digital reprints of books that are still sought after by scholars and students but could not be reprinted economically using traditional technology. The Cambridge Library Collection extends this activity to a wider range of books which are still of importance to researchers and professionals, either for the source material they contain, or as landmarks in the history of their academic discipline.

Drawing from the world-renowned collections in the Cambridge University Library and other partner libraries, and guided by the advice of experts in each subject area, Cambridge University Press is using state-of-the-art scanning machines in its own Printing House to capture the content of each book selected for inclusion. The files are processed to give a consistently clear, crisp image, and the books finished to the high quality standard for which the Press is recognised around the world. The latest print-on-demand technology ensures that the books will remain available indefinitely, and that orders for single or multiple copies can quickly be supplied.

The Cambridge Library Collection brings back to life books of enduring scholarly value (including out-of-copyright works originally issued by other publishers) across a wide range of disciplines in the humanities and social sciences and in science and technology.

Cambridge University Press

978-1-108-05058-6 - Oeuvres complètes de Niels Henrik Abel: Nouvelle édition: Volume 2

Edited by L. Sylow and S. Lie

Frontmatter

[More information](#)

Oeuvres complètes de Niels Henrik Abel

Nouvelle édition

VOLUME 2

EDITED BY L. SYLOW AND S. LIE



CAMBRIDGE
UNIVERSITY PRESS

Cambridge University Press

978-1-108-05058-6 - Oeuvres complètes de Niels Henrik Abel: Nouvelle édition: Volume 2

Edited by L. Sylow and S. Lie

Frontmatter

[More information](#)

CAMBRIDGE UNIVERSITY PRESS

Cambridge, New York, Melbourne, Madrid, Cape Town,
Singapore, São Paulo, Delhi, Mexico City

Published in the United States of America by Cambridge University Press, New York

www.cambridge.org

Information on this title: www.cambridge.org/9781108050586

© in this compilation Cambridge University Press 2012

This edition first published 1881

This digitally printed version 2012

ISBN 978-1-108-05058-6 Paperback

This book reproduces the text of the original edition. The content and language reflect the beliefs, practices and terminology of their time, and have not been updated.

Cambridge University Press wishes to make clear that the book, unless originally published by Cambridge, is not being republished by, in association or collaboration with, or with the endorsement or approval of, the original publisher or its successors in title.

Cambridge University Press

978-1-108-05058-6 - Oeuvres complètes de Niels Henrik Abel: Nouvelle édition: Volume 2

Edited by L. Sylow and S. Lie

Frontmatter

[More information](#)

ŒUVRES

COMPLÈTES

DE NIELS HENRIK ABEL

TOME SECOND

Cambridge University Press

978-1-108-05058-6 - Oeuvres complètes de Niels Henrik Abel: Nouvelle édition: Volume 2

Edited by L. Sylow and S. Lie

Frontmatter

[More information](#)

Cambridge University Press

978-1-108-05058-6 - Oeuvres complètes de Niels Henrik Abel: Nouvelle édition: Volume 2

Edited by L. Sylow and S. Lie

Frontmatter

[More information](#)

ŒUVRES
COMPLÈTES
DE NIELS HENRIK ABEL

NOUVELLE ÉDITION

PUBLIÉE AUX FRAIS DE L'ÉTAT NORVÉGIEN

PAR MM. L. SYLOW ET S. LIE

TOME SECOND

CONTENANT LES MÉMOIRES POSTHUMES D'ABEL



CHRISTIANIA

IMPRIMERIE DE GRØNDAHL & SØN

M DCCC LXXXI

Cambridge University Press

978-1-108-05058-6 - Oeuvres complètes de Niels Henrik Abel: Nouvelle édition: Volume 2

Edited by L. Sylow and S. Lie

Frontmatter

[More information](#)

TABLE DES MATIÈRES DU TOME SECOND.

	PAGES
I. Les fonctions transcendentes $\Sigma \frac{1}{a^2}, \Sigma \frac{1}{a^3}, \Sigma \frac{1}{a^4}, \dots, \Sigma \frac{1}{a^n}$ exprimées par des intégrales définies	1.
II. Sur l'intégrale définie $\int_0^1 x^{a-1} (1-x)^{c-1} \left(l \frac{1}{x}\right)^{a-1} dx$;	7.
III. Sommation de la série $y = q(0) + q(1)x + q(2)x^2 + q(3)x^3 + \dots + q(n)x^n$, n étant un nombre entier positif fini ou infini, et $q(n)$ une fonction algébrique rationnelle de n	14.
IV. Sur l'équation différentielle $dy + (p + qy + ry^2)dx = 0$, où p, q et r sont des fonctions de x seul.	19.
V. Sur l'équation différentielle $(y + s)dy + (p + qy + ry^2)dx = 0$	26.
VI. Détermination d'une fonction au moyen d'une équation qui ne contient qu'une seule variable	36.
VII. Propriétés remarquables de la fonction $y = \varphi x$ déterminée par l'équation $fy \cdot dy - dx \sqrt{(a-y)(a_1-y)(a_2-y) \dots (a_m-y)} = 0$, fy étant une fonction quelconque de y qui ne devient pas nulle ou infinie lorsque $y = a, a_1, a_2, \dots, a_m$	40.
VIII. Sur une propriété remarquable d'une classe très étendue de fonctions transcendentes	43.
IX. Extension de la théorie précédente	47.
X. Sur la comparaison des fonctions transcendentes	55.
XI. Sur les fonctions génératrices et leurs déterminantes	67.
XII. Sur quelques intégrales définies	82.
XIII. Théorie des transcendentes elliptiques	87.

TABLE DES MATIÈRES.

	PAGES.
XIV. Note sur la fonction $\psi x = x + \frac{x^2}{2^2} + \frac{x^3}{3^2} + \dots + \frac{x^n}{n^2} + \dots$	189.
XV. Démonstration de quelques formules elliptiques	194.
XVI. Sur les séries	197.
XVII. Mémoire sur les fonctions transcendentes de la forme $\int y dx$, où y est une fonction algébrique de x	206.
XVIII. Sur la résolution algébrique des équations	217.
XIX. Fragmens sur les fonctions elliptiques	244.
XX. Extraits de quelques lettres à Holmboe	254.
XXI. Extrait d'une lettre à Hansteen	263.
XXII. Extraits de quelques lettres à Crelle	266.
XXIII. Lettre à Legendre	271.
Aperçu des manuscrits d'Abel conservés jusqu'à présent	283.
Notes aux mémoires du tome I	290.
Notes aux mémoires du tome II	324.
Table pour faciliter la recherche des citations	339.