DIFFERENTIAL AND INTEGRAL CALCULUS FOR TECHNICAL SCHOOLS AND COLLEGES

Published @ 2017 Trieste Publishing Pty Ltd

ISBN 9780649562435

Differential and Integral Calculus for Technical Schools and Colleges by P. A. Lambert

Except for use in any review, the reproduction or utilisation of this work in whole or in part in any form by any electronic, mechanical or other means, now known or hereafter invented, including xerography, photocopying and recording, or in any information storage or retrieval system, is forbidden without the permission of the publisher, Trieste Publishing Pty Ltd, PO Box 1576 Collingwood, Victoria 3066 Australia.

All rights reserved.

Edited by Trieste Publishing Pty Ltd. Cover @ 2017

This book is sold subject to the condition that it shall not, by way of trade or otherwise, be lent, re-sold, hired out, or otherwise circulated without the publisher's prior consent in any form or binding or cover other than that in which it is published and without a similar condition including this condition being imposed on the subsequent purchaser.

www.triestepublishing.com

P. A. LAMBERT

DIFFERENTIAL AND INTEGRAL CALCULUS FOR TECHNICAL SCHOOLS AND COLLEGES

Trieste

DIFFERENTIAL AND INTEGRAL CALCULUS

26 20

1.1

1.,

35

i.

88

35 C

43.5

·The 100.

 $\tilde{\mathbf{x}}$

3

DIFFERENTIAL AND INTEGRAL CALCULUS

100

τ.

FOR

TECHNICAL SCHOOLS AND COLLEGES

BY

P. A. LAMBERT, M.A.

New York THE MACMILLAN COMPANY LONDON: MACMILLAN & CO., LTD. 1898

All rights reserved

Math 2 298,9 HARVARD COLLEGE LIBRARY GIFT DE

1

5 N

- 02

MRS. CHARLES & PEIACE JUNE 28 1915

COPYRIGHT, 1998, By THE MACMILLAN COMPANY.

Nortroob Bress J. S. Cushing & Co. - Burwick & Smith Norwood Mass. U.S.A.

105

. .

PREFACE

THIS text-book on the Differential and Integral Calculus is intended for students who have a working knowledge of Elementary Geometry, Algebra, Trigonometry, and Analytic Geometry.

The object of the text-book is threefold :

By a logical presentation of principles to inspire confidence in the methods of infinitesimal analysis.

By numerous problems to aid in acquiring facility in applying these methods.

By applications to problems in Physics and Engineering, and other branches of Mathematics, to show the practical value of the Calculus.

The division of the subject-matter according to classes of functions, makes it possible to introduce these applications from the start, and thereby arouse the interest of the student.

The simultaneous treatment of differentiation and integration, and the use of trigonometric substitution to simplify integration, economize the time and effort of the student.

P. A. LAMBERT.

۰.

Y

2 2 1 2 3 2

. . .

3) 3

TABLE OF CONTENTS

.

CHAPTER I

ON FUNCTIONS

	ON FUNCTIONS			
ARTO	CL#		24	LOB
1.	Definition of a Function	52	14	1
2.	The Indefinitely Large and the Indefinitely Small .	÷.	3 9	2
3.	Limita			3
4.	Corresponding Differences of Function and Variable			5
5,	Classification of Functions	3	200	6

CHAPTER II

THE LIMIT OF THE RATIO AND THE LIMIT OF THE SUM

6.	Direction of a Curve .	S.	2		20	÷.				9
7.	Velocity		26	393	10	3 8	38	3÷	33	12
8.	Rate of Change		2.0	10		30	10			14
9.	The Limit of the Sam		1.	01						15
10.	General Theory of Limit	ts .				21 1		10 •		17
11.	Continuity		. e. 1	1.00	3 35		36	10		18

CHAPTER III

DIFFERENTIATION AND INTEGRATION OF ALGEBRAIC FUNCTIONS

12.	Differentiation .		58) 1	212	3357	•	3	36	0.0		21
13.	Integration .				3365	x 1	*	*	2.8		29
14.	Definite Integrals										34
15.	Evaluation of the	Limit	of th	e Su	m.	12					36
16.	Infinitesimals and	1 Diffe	rentla	ปล		10			14	040	37

CHAPTER IV

APPLICATIONS OF ALGEBRAIC DIFFERENTIATION AND INTEGRATION

17.	Tangents and Normals	37	19	13	26	30	54	43	43
18.	Length of a Plane Curve	8	3		83		28		45
			vli						