

**THE FIRST THREE BOOKS OF
EUCLID'S ELEMENTS OF
GEOMETRY, WITH
THEOREMS AND PROBLEMS**

Published @ 2017 Trieste Publishing Pty Ltd

ISBN 9780649450794

The First Three Books of Euclid's Elements of Geometry, with Theorems and Problems by
Robert Simson & Thomas Tate

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

ROBERT SIMSON & THOMAS TATE

**THE FIRST THREE BOOKS OF
EUCLID'S ELEMENTS OF
GEOMETRY, WITH
THEOREMS AND PROBLEMS**

THE
FIRST THREE BOOKS
OF
EUCLID'S ELEMENTS
OF
GEOMETRY,

FROM THE TEXT OF
DR. ROBERT SIMSON,

TOGETHER WITH
VARIOUS USEFUL THEOREMS AND PROBLEMS,
AS GEOMETRICAL EXERCISES ON EACH BOOK.

BY THOMAS TATE,

MATHEMATICAL MASTER OF THE NATIONAL SOCIETY'S
TRAINING COLLEGE, BATTERSEA;

AUTHOR OF "THE PRINCIPLES OF THE DIFFERENTIAL AND INTEGRAL
CALCULUS," ETC. ETC.



LONDON:

PRINTED FOR
LONGMAN, BROWN, GREEN, AND LONGMANS,
PATERNOSTER-ROW.

1849.

London:
Spottiswoode and Shaw,
New-street-Square.

ADVERTISEMENT.

THIS edition of Euclid has been published in a cheap form, with the hope that it may tend to advance the mathematical education of this country, and with an especial reference to the instruction of Schoolmasters who may be desirous of obtaining a Government certificate.

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

EUCLID'S
ELEMENTS OF GEOMETRY.

BOOK I.

DEFINITIONS.

I.

A POINT is that which hath no parts, or which hath no magnitude.

II.

A line is length without breadth.

III.

The extremities of a line are points.

IV.

A straight line is that which lies evenly between its extreme points.

V.

A superficies is that which hath only length and breadth.

VI.

The extremities of a superficies are lines.

VII.

A plane superficies is that in which any two points being taken, the straight line between them lies wholly in that superficies.

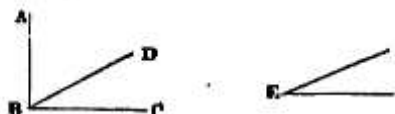
B

VIII.

"A plane angle is the inclination of two lines to one another in a plane, which meet together, but are not in the same direction."

IX.

A plane rectilinear angle is the inclination of two straight lines to one another, which meet together, but are not in the same straight line.



N. B. "When several angles are at one point B, any one of them is expressed by three letters, of which the letter that is at the vertex of the angle, that is, at the point in which the straight lines that contain the angle meet one another, is put between the other two letters, and one of these two is somewhere upon one of those straight lines, and the other upon the other line: Thus the angle which is contained by the straight lines AB, CB, is named the angle ABC, or CBA; that which is contained by AB, BD, is named the angle ABD, or DBA; and that which is contained by DB, CB is called the angle DBC, or CBD; but, if there be only one angle at a point, it may be expressed by a letter placed at that point; as the angle at E."

X.

When a straight line standing on another straight line makes the adjacent angles equal to one another, each of the angles is called a right angle; and the straight line which stands on the other is called a perpendicular to it.



XI.

An obtuse angle is that which is greater than a right angle.



XII.

An acute angle is that which is less than a right angle.

XIII.

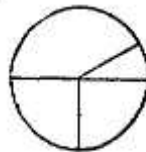
“A term or boundary is the extremity of any thing.”

XIV.

A figure is that which is inclosed by one or more boundaries.

XV.

A circle is a plane figure contained by one line, which is called the circumference, and is such that all straight lines drawn from a certain point within the figure to the circumference are equal to one another.



XVI.

And this point is called the centre of the circle.

XVII.

A diameter of a circle is a straight line drawn through the centre, and terminated both ways by the circumference.

XVIII.

A semicircle is the figure contained by a diameter and the part of the circumference cut off by the diameter.

XIX.

“A segment of a circle is the figure contained by a straight line, and the circumference it cuts off.”

XX.

Rectilineal figures are those which are contained by straight lines.

XXI.

Trilateral figures, or triangles, by three straight lines.

XXII.

Quadrilateral, by four straight lines.

XXIII.

Multilateral figures, or polygons, by more than four straight lines.