



EXPLANATION

OF

The Figures

Contained on

THE

CARD.

EXPLANATION

OF

THE FIGURES

Contained on the Card ,

BY

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DEFINITIONS.



GEOMETRY is a Science which shews the properties of all kinds of magnitude or extension; such as Lines, Surfaces, and Solids: but in this little Treatise, Lines and Surfaces only will be considered.

The first division of Geometry treats of Lines.

A Line is a length without breadth, the extremities of which are points.

A Point is indivisible, and has neither length, breadth, or thickness; thus: ●

An Angle is the inclination of two lines meeting in one point; and bears

different names according to that inclination.

The Plane Angles are formed by straight lines; the Spherical Angles, are the inclination of curve lines, measured on the arc of a great circle.

A Right-Angle is said to be equal to 90 degrees; an Acute is less than 90; and an Obtuse is more than 90.

PLANIMETRY, or the **MEASUREMENT OF SUPERFICIES**, forms the second division of **GEOMETRY**, explained here, as a reference, to the Cards.

A Plane, or Surface, is a figure bounded by lines, and varies its name according to the number of lines and angles it contains, and also, to the nature of angles it is composed of, as follow.

A TRIANGLE, or TRIGON.

A Plane Triangle is bounded by three lines, and has three angles, from which it takes its name.

As relating to sides, there are three kinds, viz :

The Equilateral, having all its sides and angles equal.

The Isoceles, having only two sides and the two angles at the base equal :
and

The Scalene, having every side and every angle unequal.

As relating to the nature of their angles, they are called right-angled, when they contain one right angle; obtuse-angled, when they contain one obtuse-angle; and acute-angled, when they contain three acute angles.

In a Scalene Triangle, the longest side is generally called the Hypo-

thenuse; the side upon which it rests, (as in the others) is the base; and the third side is the perpendicular.

A TETRAGON

Is a four-sided figure, and is either a Square, a Parallelogram, a Quadrangle, a Rhombus, a Rhomboides, a Trapezium, or a Trapezoid; viz.

A Square, when all its sides are equal and parallel to each other, and its angles all right-angles.

A Parallelogram, or oblong figure, when two sides are equal and parallel, and its angles right-angles.

Both the Square and Parallelogram are sometimes called Quadrangles from their having four angles, and Quadrilateral from their having four sides.

A Rhombus, when the sides are equal, but the angles not. This form is frequently called a Diamond.

A Rhomboides, when only two sides

are equal, and the angles unequal, that is, (as in the Rhombus) two are obtuse, and two acute.

A Trapezium, according to "Euclid's Elements," is applicable to all four-sided figures; but it is to be remarked that, properly speaking, a Trapezium has none of its sides parallel, and none of its angles equal.

The Trapezoid differs in having two lines parallel.

A PENTAGON

Has five sides and five angles.

A HEXAGON

Has six sides and six angles.

A HEPTAGON

Has seven sides and seven angles.

8

An OCTAGON

Has eight sides and eight angles.

A NONAGON

Has nine sides and nine angles.

A DECAGON

Has ten sides and ten angles.

An UNDECAGON

Has eleven sides and eleven angles.

A DUODECAGON

Has twelve sides and twelve angles.

All Superficies exceeding four sides are called Multilateral figures, or Polygons; and are, as before named, according to the number of their sides. If the sides be all equal, and consequently their angles equal, they are called Regular Polygons; if not equal, they are Irregular Polygons.

A CIRCLE

Is a plane figure bounded by a curve line, every part of which is equally distant from a point within it, called its centre.

The line passing through the centre and ending at the circumference is its diameter, and the half of it is its radius; or any other line drawn from the centre to the circumference may become a radius.

The circumference is that curve line which forms the boundary of the circle, and is (either great or small) always considered equal to 360 parts,

called Degrees, a Semicircle is therefore equal to 180 Degrees, and a Quadrant or fourth part to 90 Degrees.

An arc of a circle is any part of the circumference; and the line which joins its extremities is called a chord.

A Segment of a circle is a portion of it, greater or less than a Semi-circle, cut off by a chord.

A Sector of a circle is a portion of it lying between any two radii, and the intercepted part of its circumference.

A Circular Ring is that space included between the circumference of two concentric circles, or circles having the same centre.

Of course the Semi-circular Ring is half that space.

Circles described on different centres are called eccentric.

An ELLIPSIS, or OVAL.

This figure is bounded by a regular curve line returning into itself, and

its two axis cutting each other in the centre.

The longest axis is called the **Transverse-axis**, and the shortest the **Conjugate-axis**

The curve line which bounds the figure is generally called the **Perimeter** or **circumference**.

The **Elliptical Ring** is that space included between the **Perimeters** of two concentric **Ellipsis**. They are called **Oval** when their figure approaches to that of an egg.

A **Spindle** is formed by the union of two segments of an **ellipsis**, less than the half, which occasions this figure to be more tapering than the **ellipsis**.

The **Parabola** and **Hyperbola** may be considered as half, or part of an **ellipsis**.

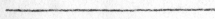
To explain it properly, it would be necessary to describe the **Conic Sections**, much too intricate for this little amusing pastime.

For a thorough knowledge of the nature and propriety of these Figures, with the method of working sums from them, Mr. KEITH's "*Complete Measurer*" is most strongly recommended as a clear and easy work, treating of Geometry in general. The box of *Geometrical Solids* is also recommended to accompany the box of *Surfaces*, which, with the above mentioned excellent work, will make a complete little study of the useful science of Geometry.


FINIS.

CARTE
DE
GÉOMÉTRIE.


1 Lines.
Horizontal



Vertical line

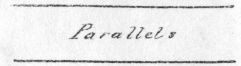


1. Oblique or
2. Diagonal

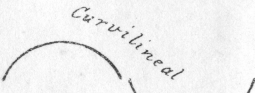


2 Lines.

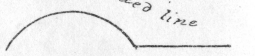
Parallels



Curvilinear

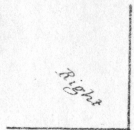


Mixed line

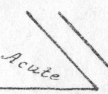


3 Rectilinear Angles.

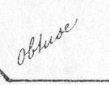
Right



Acute

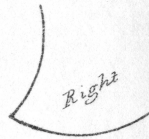


Obtuse




4 Spherical Angles.

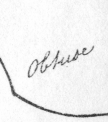
Right



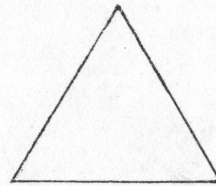
Acute



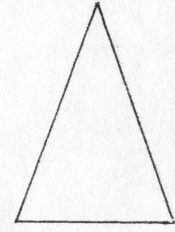
Obtuse



5 Equilateral Triangle

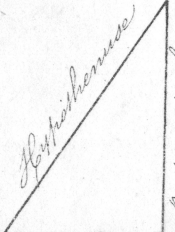


6 Isosceles Triangle

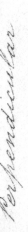


7 Right-angled Triangle.


Hypotenuse



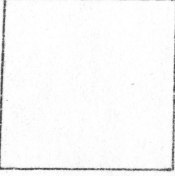
Perpendicular



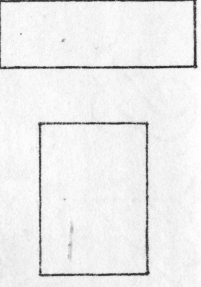
Base



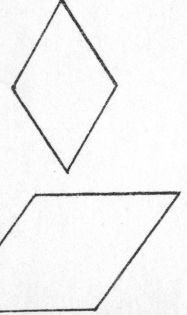
8 Square or Tetragon.



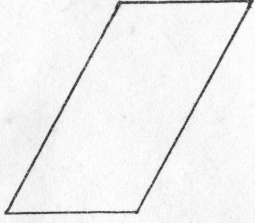
9 Parallelograms.



10 Rhombuses.

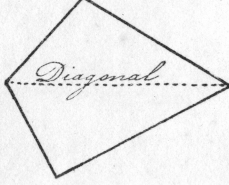


11 Rhomboides.

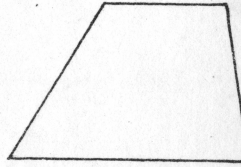


12 Trapezium.

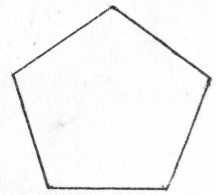
Diagonal



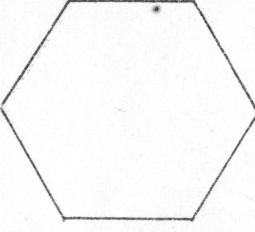
13 Trapezoid.



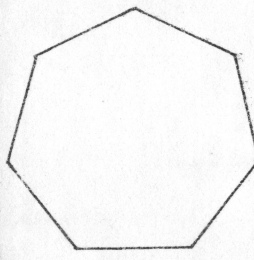
14 Pentagon.



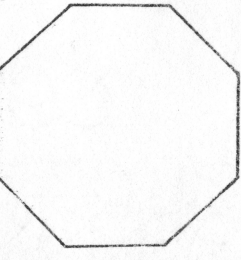
15 Hexagon.



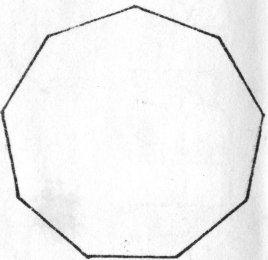
16 Heptagon.



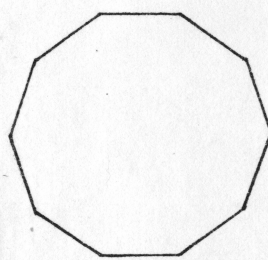
17 Octagon.



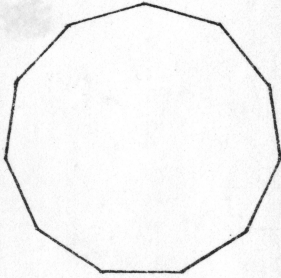
18 Nonagon.



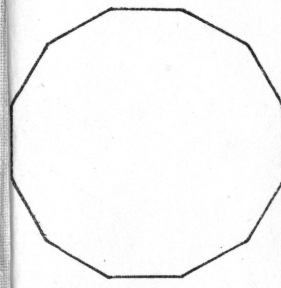
19 Decagon.



20 Undecagon.

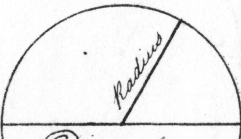


21 Duodecagon.

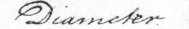


22 Circle.

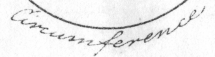
Radius



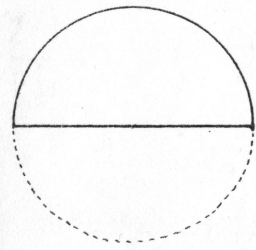
Diameter



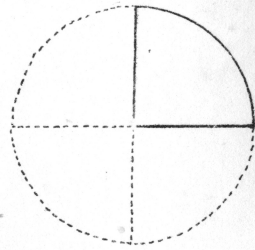
Circumference



23 Semicircle.

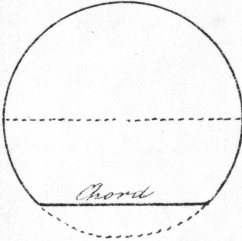


24 Quadrant.

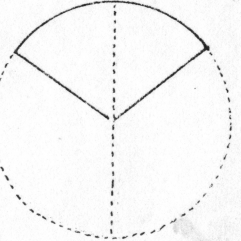


25 Segment of a circle.

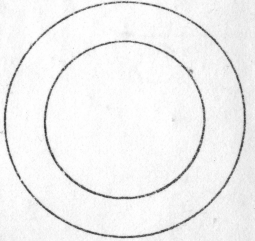
Chord



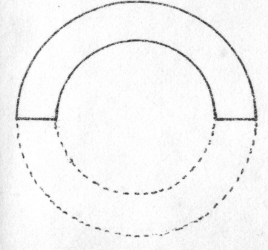
26 Sector.



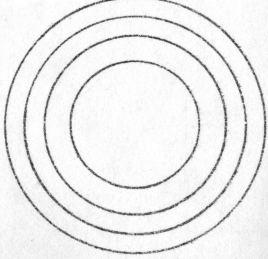
27 Circular Ring.



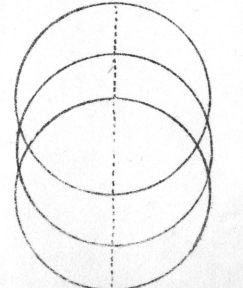
28 Semicircular Ring.



29 Concentric Circles.




30 Eccentric Circles.

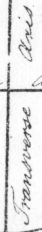


31 Ellipsis or Oval.

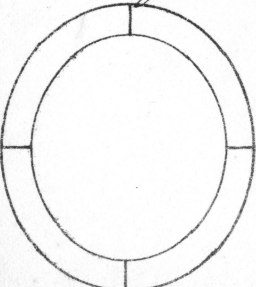
Conjugate Axis



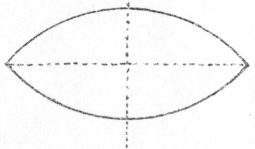
Transverse Axis



32 Elliptical Ring.

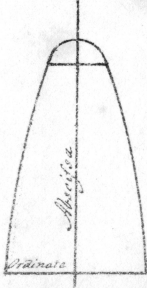


33 Spindle.



34 Parabola.

Axis



35 Hyperbola.

