

## Geometry.

### Definitions.

A point in the Mathematics is considered only as a Mark, without any regard to dimenions.

A Line is considered as length, without regard to breadth or thickness..

A Plain or Surface has two dimensions, Length and Breadth; but is not considered as having thickness.

A solid has three dimensions, Length, Breadth and thickness, and is usually called a Body.

A Line is either straight, which is the nearest distance between two Points; or crooked, called a curve line, whose ends may be drawn further asunder.

If two lines are at equal distance from one another in every part, they are called parallel Lines, which, if continued infinitely, will never meet.

If two lines incline one towards another, they will if continued meet in a point: by which meeting is formed an Angle.

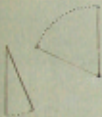
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Date: 1794

Description: Geometry and Geography notebook of Lucia Wadsworth.

# GEOMETRY

If one Line fall directly upon another, so that the Angles on both sides are equal, the Line, so falling, is called a perpendicular, and the Angles, so made, are called right Angles and are equal to 90 Degrees, each.



All Angles, except right Angles, are called oblique Angles, whether they are acute, that is, less than a right Angle; or obtuse, that is, greater than a right Angle.

## Geometrical Problems.

Problem 1<sup>st</sup> To divide a line *AB* into two equal parts.



Set one foot of the compasses on the point *A*, and, opening them beyond the middle of the line; <sup>describe two arcs above and below the line</sup> with the same extent of the compasses, set one foot in the point *B*, and, describe two arcs crossing the former; draw a line from the intersection of the arcs above the line, to the intersection below the line, and it will divide the line *AB* into two equal parts.

# GEOMETRY.

If one Line falls directly upon another, so that the Angles on both sides are equal, the Line, so falling, is called a perpendicular, and the Angles, so made, are called right Angles and are equal to 90 Degrees, each.

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## Geometrical Problems.

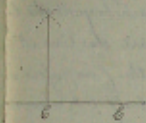
Problem 1<sup>st</sup> To divide a line *AB* into two equal parts.

Set one foot of the compasses in the point *A*, and, opening them beyond the middle of the line; describe arches above and below the line; with the same extent of the Compasses set one foot in the point *B*, and, describe two arches crossing the former: draw a line from the intersection of the arches above the line, to the intersection below the line, and it will divide the line *AB* into two equal parts.

# GEOMETRY

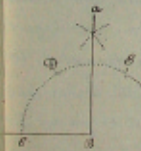
*Problem 2. To erect a perpendicular on the point C in a given line.*

*Set one foot of the compasses in the given point C, extend the other foot to any distance at pleasure, as to D, and with that extent make the marks D and E. With the Compasses, one foot in D, at any extent above half the distance of D and E describe an arch above the line, and with the same extent, and one foot in E describe an arch, crossing the former; draw a line from the intersection of the arches to the given point C, which will be perpendicular to the given line in the point C.*



*Problem 3. To erect a perpendicular on the end of a line.*

*Set one foot of the Compasses in the given point B, open them to any convenient distance, and describe the arch CDE; set one foot in C, and with the same extent, cross the arch at D; with the same extent cross the arch again from D to E, then with one foot of the Compasses on D and with any extent above the half of DE, describe an arch a, take the Compasses from D, and, keeping them at the same extent with one foot in E, intersect the former arch a in a; from thence draw a line to the point B which will be a perpendicular to AB.*



# GEOMETRY

Problem 2. To erect a perpendicular on the point C in a given line.

Set one foot of the compasses in the given point C, extend the other foot to any distance at pleasure, as to D, and with that extent make the marks D, and E. With the Compasses, on foot in D, at any extent above half the distance of D and E describe an arch above the line, and with the same extent, and one foot in E describe an arch, crossing the former; draw a line from the intersection of the arches to the given point C, which will be perpendicular to the given line in the point C.

Problem 3d. To erect a perpendicular on the end of a line.

Set one foot of the Compasses in the given point B, open them to any convenient distance, and describe the arch CDE; set one foot in C, and with the same extent, cross the arch at D; with the same extent cross the arch again from D to E, then with one foot of the Compasses in D and with any extent above the half of DE; describe an arch, take the Compasses from D, and, keeping them at the same extent with one foot in E, intersect the former arch a in a; from thence draw a line to the point B which will be a perpendicular to AB.