## GEOMETRY.

## 3RD DIVISION.

- 1. Prove that any two sides of a triangle are together greater than the third side.
- 2. Prove that if, in any triangle, the square of one side be equal to the sum of the squares of the other two, the angle included between these two is right.
- 3. Prove that, if a line be cut equally and unequally, the sum of the squares of the unequal parts will equal twice the square of the half line, together with twice the square of the line intercepted between the points of section.
- 4. Divide a line so that the rectangle under the whole line and one part shall be equal to the square of the other part.

## MENSURATION.

## 3BD DIVISION.

- 1. A figure, whose shape is a trapezium, has the diagonal 6230 links, the perpendicular to the north angle 1129 links, that to the south angle 2150 links; required the area.
- 2. Find by duodecimals the number of yards of carpeting, 2 feet 3 inches wide, it will take to cover a floor, the length of which is 42 feet 7 inches, and the breadth 25 feet 8 inches.
- 3. Required the length of a cord, fastened to a stake at one end and to a cow's horns at the other, to allow her to graze on an acre of grass, and no more.
- 4. Required the solid content of an obelisk in the shape of a frustrum of a square pyramid, height 95 feet, side of base, 7 feet 3 inches, side of summit, 5 feet 8 inches; also the weight of stone it would take to build it, assuming a cubic foot of stone to weigh 158 pounds.

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