

## APPENDIX No. V.

### MENSURATION.

*A few more useful things in Measuring.*

A figure of 3 sides is called a **TRIANGLE**: when all the 3 sides are equal in length, it is called an *equilateral* triangle; when 2 of its sides are equal, it is called an *isosceles* triangle; when all its sides are unequal, a *scalene* triangle. Triangles are also denominated *right angled* (as that in page 142) and *oblique angled* triangles.

*To find the area of a triangle, of any form or size.*

**RULE I.** Multiply the base by the perpendicular height, and half the product will be the content or area.

**RULE II.** When the 3 sides only are given. From  $\frac{1}{2}$  the sum of the 3 sides subtract each side separately; multiply the half sum and the three remainders continually together; and the square root of the product will be the area.

1. How many square yards are in a triangle, whose base is 40, and perpendicular height 30 feet? *Ans.* 66 $\frac{1}{2}$  sq. yds.

2. Required the content of a triangle, whose base is 18 feet 4 inches, and height 11 feet 10 inches. *Ans.* 108 ft. 5 in. 8 pts.

3. What is the area of a triangular field, whose base is 6.25 chains, and height 5.20 chains? *Ans.* 1 a. 2 r. 20 per.

4. How many square yards are in a triangle, whose three sides are 13, 14, 15, feet? *Ans.* 9 $\frac{1}{2}$  sq. yds.

5. Required the area of a triangular field, whose base is 40 chains, and its perpendicular height 15 chains. *Ans.* 30 a.

6. How many acres are in a triangular field, whose 3 sides are 380, 420, 760 yards? *Ans.* 9 a. 3 r. 6.8 per.

A figure of 4 sides is called a **quadrangle** or **quadrilateral**. When all its sides are equal, and all its angles right angles, it is called a *square*: when all its angles are right ones, but its length greater than its breadth, it is called a *parallelogram*: when all its sides are equal, but its angles oblique, it is called a *rhombus*: an oblique angled parallelogram is called a *rhomboid*.

*To find the area of all these four-sided figures:* Multiply the length by the breadth.

7. How many acres are in a square field, whose side is 18.25 chains? *Ans.* 33 a. 1 r. 9 per.