

Algebra Applied To Practical Geometry.

INTRODUCTION.

I.

WHEN the relative positions of points connected by straight lines are to be indicated, then the connecting lines are, for the sake of convenience, represented by two letters, AD , BC . . . ; but when the relations of the magnitude of lines are only under consideration, then these lines are more conveniently represented by a single letter, or an algebraic symbol, a , b , c . . .

Let a and b represent two given lines, then

$a + b$ expresses their sum,

$a - b$ expresses their difference,

a^2 expresses a square constructed on the line a ,

$(a + b)^2$ expresses a square constructed on the sum of these two lines,

ab expresses a rectangle whose a is the base, and b the height, or *vice versa*,

$\frac{ab}{2}$ expresses a triangle, whose a is the base, and b the height.

$\frac{p(m+n)}{2}$ expresses a trapezoid, whose p is the height; m and n the two bases.

II.

Any linear problem may be solved either numerically or graphically; and in both cases an algebraic expression of the