ALGEBRAIC SOLUTIONS OF PROBLEMS.

[In the following pages, the letters N. S., put after a formula, stand for *Numerical Solution;* and the letters G. S. stand for *Graphical Solution.*]

PROBLEM I.

To find the side x of a square x^2, whose area shall be equivalent to twice that of a given square a^2.

$$x = \sqrt{2\,a^2} \quad \text{N. S.}$$
$$= \sqrt{2\,a \times a} \quad \text{G. S.}$$

PROBLEM II.

To find the side x of a square x^2, whose area shall be equivalent to five times that of a given square a^2.

$$x = \sqrt{5\,a^2} \quad \text{N. S.}$$
$$= \sqrt{5\,a \times a} \quad \text{G. S.}$$

PROBLEM III.

To find the side x of a square x^2, whose area shall be equivalent to one-fifth of that of a given square a^2.

$$x = \sqrt{\frac{a^2}{5}} \quad \text{N. S.}$$

$$= \sqrt{a \times \frac{a}{5}} \quad \text{G. S.}$$

PROBLEM IV.

To find the side x of a square x^2, whose area exceeds that of a given square a^2, by the three-eighths of it.

$$x = \sqrt{\frac{11\,a^2}{8}} \quad \text{N. S.}$$

$$= \sqrt{\frac{11\,a}{8} \times a} \quad \text{G. S.}$$