

CHAPTER IX.

QUADRATIC EQUATIONS.

1. We have seen that a quadratic equation is one in which the second power or square of the unknown quantity is involved. We design to give the student some insight into these equations here, leaving the more complete study of them to future investigation.

2. Quadratic equations are divisible into two classes, *Pure* and *Affected*.

3. A *Pure Quadratic* is one in which the unknown quantity is found of the second power only, while an *Affected Quadratic* is one in which the unknown quantity is found both of the second and also of the first power. Thus $x^2 = 4$ is a pure quadratic; $x^2 + 2x = 3$ is an affected quadratic.

4. Pure quadratic equations are solved just like simple equations, excepting that when the equation shows the value of x^2 we require to extract the square root of both sides of the equation, and thus find the value of x .

EXAMPLE.

(1)

$$2x^2 + 8 = 16 \text{ find } x.$$

$$\therefore 2x^2 = 16 - 8 = 8$$

$$\text{and } x^2 = 4$$

$$\therefore x = \pm 2$$