**Algebraic Equation**

**Algebraic equation**, statement of the equality of two expressions formulated by applying to a set of variables the algebraic operations, namely, addition, subtraction, multiplication, division, raising to a power, and extraction of root. Examples are *x*² + 1 and (*y*⁴*x*² + 2*xy* - *y*)/ (*x* - 1) = 12. An important special case of such equations is that of polynomial equations, expression of the form *axn* + + ... + *gx* + *h* = *k*. They have as many solutions as their degree (*n*), and the search for their solutions stimulated much of the development of classical and modern algebra. Equations like *x* sin (*x*) = *c* that involve nonalgebraic operations, such as logarithms or trigonometric functions, are said to be transcendental.