INTRODUCTION TO ALGEBRA

1. In algebra, we substitute number with letters or alphabets to arrive at a solution.

2. We use letters like x, m, a, b, etc. to represent unknown quantities in the equation.

IMPORTANT ALGEBRAIC FORMULAS
$(a + b)^2 = a^2 + 2ab + b^2$
$(a - b)2\ a2 - 2ab + b^2$
$a2\ b2 = (a + b)(a - b)$
$(a + b)^3 = a^3 + 3a^2b + 3ab^2 + b^3$
$(a - b)^3\ a^3 - 3a^2b + 3ab^2 - b^3$
$a^3 + b^3 = (a + b)\ (a^2 - ab + b^2)$
$a3^3 - b^3 = (a - b)\ (a^2 + ab + b^2)$
$(a + b)^2 - (a - b)^2 = 4ab$
$(a + b + c)^2 = a^2 + b^2 + c^2 + 2ab + 2bc + 2ac$
$a^3 + b^3 + c^3 - 3abc = (a + b + c)\ (a^2 + b^2 + c^2 - ab - bc - ac)$
$a^4 + a^2 + 1 = (a^2 + a + 1)\ (a^2 - a + 1)$
$a^4 + a^2b^2 + b^2 = (a^2 + ab + b^2)\ (a^2 - ab + b^2)$
$a^4\ b4 = (a^2 + b^2)\ (a + b)(a - b)$
$a - b^3 = (a + b)\ (a^2 + b^2)\ (a + b)(a - b)$