Algebra Formulas

$a^2 - b^2 = (a - b)(a + b)$

$(a + b)^2 = a^2 + 2ab + b^2$

$a^2 + b^2 = (a + b)^2 - 2ab$

$(a - b)^2 = a^2 - 2ab + b^2$

$(a + b + c)^2 = a^2 + b^2 + c^2 + 2ab + 2bc + 2ca$

$(a - b - c)^2 = a^2 + b^2 + c^2 - 2ab + 2bc - 2ca$

$(a + b)^3 = a^3 + 3a^2b + 3ab^2 + b^3$

$(a - b)^3 = a^3 - 3a^2b + 3ab^2 - b^3$

$a^3 - b^3 = (a - b)(a^2 + ab + b^2)$

$a^3 + b^3 = (a + b)(a^2 - ab + b^2)$

$(a + b)^4 = a^4 + 4a^3b + 6a^2b^2 + 4ab^3 + b^4$

$(a - b)^4 = a^4 - 4a^3b + 6a^2b^2 - 4ab^3 + b^4$

$a^4 - b^4 = (a - b)(a + b)(a^2 + b^2)$

$(a^m)(a^n) = a^{m+n}$

$(ab)^m = a^m b^m$

$(a^m)^n = a^{mn}$