Multiplication of large Integers

NO
DATE

Example : 23 14 $n = 2$.

$a_0\ a_1$ $b_0\ b_1$ $n^2 = 4$ Multi

$23 = (2 * 10^1) + (3 * 10^0)$

$14 = (1 * 10^1) + (4 * 10^0)$

$23 * 14$

$[(2 * 10^1) + (3 * 10^0)] * [(1 * 10^1) + (4 * 10^0)]$

$(2*1)10^2 + [(2*4) + (3*1)]10^1 + (3*4)10^0$.

$8 + 3 = 11$

$(2*4) + (3*1) = (2+3)*(4+1) - 2*1 - 3*4$

$a_0\ b_1\ a_1\ b_0$

$= 5*5 - (2+12)$

$= 25 - 14 = 11$ //

$c = a*b = c_2 10^2 + c_1 10^1 + c_0$.

$c_2 = 2*1 \Rightarrow a_0 * b_0$

$c_0 = 3*4 \Rightarrow a_1 * b_1$

$c_1 = (a_0 + a_1) * (b_0 + b_1) - (c_2 + c_0)$

$c = a*b = c_2 10^{n} + c_1 10^{n/2} + c_0$.