$$A = \begin{pmatrix} a_{11} & a_{12} & \cdots & a_{1n} \\ a_{21} & a_{22} & \cdots & a_{2n} \\ \vdots & & & \\ a_{n1} & a_{n2} & \cdots & a_{nn} \end{pmatrix}_{n \times n}$$

$A^{-1} \rightarrow \det A = |A| \neq 0.$

$$\left(\begin{array}{cccc|cccc} a_{11} & a_{12} & \cdots & a_{1n} & 1 & 0 & \cdots & 0 \\ a_{21} & a_{22} & \cdots & a_{2n} & 0 & 1 & \cdots & 0 \\ \vdots & & & & \vdots & & & \\ a_{n1} & a_{n2} & \cdots & a_{nn} & 0 & 0 & \cdots & 1 \end{array}\right)$$

$n \times n$ | I_n

$$\left(\begin{array}{cccc|cccc} 1 & 0 & \cdots & 0 & b_{11} & b_{12} & \cdots & b_{1n} \\ 0 & 1 & \cdots & 0 & b_{21} & b_{22} & \cdots & b_{2n} \\ \vdots & & & & \vdots & & & \\ 0 & 0 & \cdots & 1 & b_{n1} & b_{n2} & \cdots & b_{nn} \end{array}\right)$$

I_n | $B = A^{-1}$.

Q	A_1	A_2	A_3	B_1	B_2	B_3	T_1	T_2	T_3
5	1	−3	109	−5	16	5	−5	16	5
21							106		

$T_1 = A_1 - Q \cdot B_1$
$= 1 - 21 \cdot (-5)$
$= 1 + 105 = 106$

$x - y \pmod 2$
$= x + (-1) \cdot y \pmod 2$
$= x + y \pmod 2 = x \oplus y.$

$[(-1) \bmod 2 = (2-1) = 1]$