$y = x$ $\quad$ $y = x^2$

$y = 1 + x_0 + x^2 + x^3 + \dots + x^n$

$x_1 = x$ $\quad$ $x_2 = x^2$ $\quad$ $x_3 = x^3 \dots x_p = x^p$

$x_1 = x_1$ $\quad$ $x_2 = x_2$ $\quad$ $x_3 = x_1 x_2$

1-100 $\quad$ 1-100 $\quad$ 1-10000

$x_1 = \frac{x_1 - \bar{x}_0}{\sqrt{100}}$ $\quad$ $x_2 = \frac{x_2 - \bar{x}_0}{\sqrt{100}}$ $\quad$ $x_3 = \frac{x_3 - \bar{x}_0}{\sqrt{10000}}$

$y =$ CRT $\quad x =$ TSLWA

$$y = \theta_0 + \theta_1 x$$

$$\begin{bmatrix} \quad \end{bmatrix} \quad \begin{bmatrix} \quad \end{bmatrix}$$

Quadratic Model

$$y = \theta_0 + \theta_1 x + \theta_2 x^2$$

$$\begin{bmatrix} 1 \\ 2 \end{bmatrix} \quad \begin{bmatrix} 1 \\ 2 \end{bmatrix} \quad \begin{bmatrix} 1 \\ 4 \end{bmatrix} \rightarrow \quad \begin{bmatrix} x & x^2 \end{bmatrix}$$