

in  $\mathbb{C}^2$ , for  $g(x)$  a polynomial of degree 6.

$$y^2 = \prod_{i=0}^5 (x - \lambda_i) \dots (*)$$

$\Rightarrow$  The smooth completion of  $(*)$  is isomorphic to  $B$ , and  $\exists$  a 2-fold map  $\pi: B \rightarrow \mathbb{P}^1$  with branch locus  $\{\lambda_i\}_{i=0}^5$ .  $\Rightarrow$  By changing coordinates of  $\mathbb{P}^1$ , we have a meromorphic function  $f_i: B \rightarrow \mathbb{C}$  with a pole at  $\lambda_i$  of order 2 ( $=g$ ), since  $\pi$  is 2-1 map.  $\Rightarrow$  Each  $\lambda_i$  is a Weierstrass point. (Here, by changing coordinates of  $\mathbb{P}^1$ , we may assume  $\pi(\lambda_i) = \infty = [0, 1] \in \mathbb{P}^1$ . See P 254 ~ P 255.)

$\Rightarrow$

Then, since the hyperelliptic series on  $B$  contains the divisors  $2p_i$ , the points

$\mu_i = (p_i - p_0) \in \text{Pic}^0(B) = A$ ,  $i = 0, \dots, 5$ , are points of order 2 on  $A$ , as are the points

$$\mu_{ij} = (p_i + p_j - 2p_0) \in A, \quad 1 \leq i < j \leq 5.$$

$\Gamma$  What is the definition of hyperelliptic series and an order of points? I can not find them anywhere. See P 962 back page for the order of points.  $\Rightarrow$

Inasmuch as the hyperelliptic series on  $B$  is unique, no pair  $p_i + p_j$  is linearly equivalent to