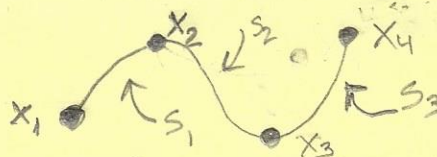


1.  $S(x)$  cont  $[x_1, x_n]$

2.  $S'(x)$  cont  $[x_1, x_n]$

3.  $S''(x)$  cont  $[x_1, x_n]$



$$S_1(x_2) = S_2(x_2)$$

$$S_2(x_3) = S_3(x_3)$$

$$S_i(x) = a_i(x-x_i)^3 + b_i(x-x_i)^2 + c_i(x-x_i) + d_i$$

$$S_i(x_i) = a_i(x_i-x_i)^3 + b_i(x_i-x_i)^2 + c_i(x_i-x_i) + d_i$$

$$S_i(x_i) = d_i$$

$$S_{i-1}(x_i) = S_i(x_i) \quad i=2, 3, \dots, n-1$$

$$d_i = a_{i-1}(x_i-x_{i-1})^3 + b_{i-1}(x_i-x_{i-1})^2 + c_{i-1}(x_i-x_{i-1}) + d_{i-1}$$

$$h = x_i - x_{i-1}$$

$$d_i = a_{i-1}h^3 + b_{i-1}h^2 + c_{i-1}h + d_{i-1}$$

$$S'_i(x_i) = S'_{i-1}(x_i)$$

$$S'_i(x_i) = 3a_i(x_i-x_i)^2 + 2b_i(x_i-x_i) + c_i$$

$$S'_i(x_i) = c_i \rightarrow S'_i(x_i) = S'_{i-1}(x_i)$$

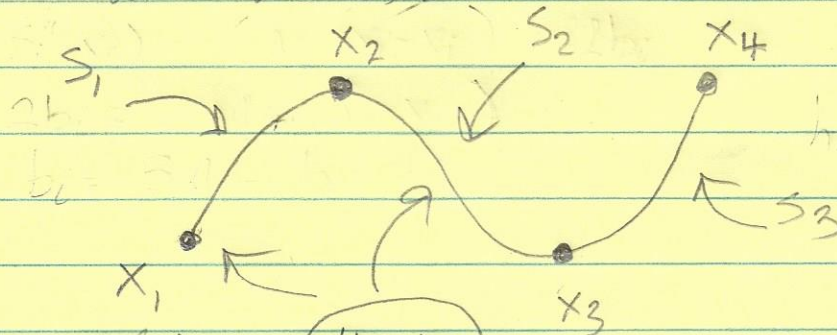
$$c_i = 3a_{i-1}(x_i-x_{i-1})^2 + 2b_{i-1}(x_i-x_{i-1}) + c_{i-1}$$

$$c_i = 3a_{i-1}h^2 + 2b_{i-1}h + c_{i-1}$$

$n=6$

$$S''_i(x_i) = S''_{i+1}(x_i)$$

$$S''_1(x_1) = S''_2(x_1)$$



$$S''_1(x_1) = S''_2(x_1)$$

$S_2$  Not touching  $S_1$  ???