

4) We form the system  $\sum_{p=0}^3 \lambda_p B_p(x_i) = f(x_i)$

$i=1, 2, 3$  and solve

$$B_p(x) = \frac{1}{6} ((x - \xi_p)_+^2 - 3(x - \xi_{p+1})_+^2 + 3(x - \xi_{p+2})_+^2 - (x - \xi_{p+3})_+^2)$$

$$B_2(x) = \frac{1}{6} ((x+2)_+^2 - 3(x+1)_+^2 + 3(x)_+^2 - (x-1)_+^2)$$

$$B_2(0) = \frac{1}{6} (2^2 - 3 + 0 - 0) = \frac{1}{6}$$

$$B_2(1/2) = \frac{1}{6} ((5/2)^2 - 3(3/2)^2 + 3(1/2)^2 - 0) = \frac{1}{24}$$

$$B_2(1) = \frac{1}{6} (3^2 - 3(2)^2 + 3(1)^2 - 0) = 0$$

$$B_1(x) = \frac{1}{6} ((x+1)_+^2 - 3(x)_+^2 + 3(x-1)_+^2 - (x-2)_+^2)$$

$$B_1(0) = \frac{1}{6} (1 - 0 + 0 - 0) = \frac{1}{6}$$

$$B_1(1/2) = \frac{1}{6} ((3/2)^2 - 3(1/2)^2 + 0 - 0) = \frac{1}{4}$$

$$B_1(1) = \frac{1}{6} (2^2 - 3(1)^2 + 0 - 0) = \frac{1}{6}$$

$$B_0(x) = \frac{1}{6} ((x)_+^2 - 3(x-1)_+^2 + 3(x-2)_+^2 - (x-3)_+^2)$$

$$B_0(0) = 0$$

$$B_0(1/2) = \frac{1}{24}$$

$$B_0(1) = \frac{1}{6}$$

$$\begin{bmatrix} 1/6 & 1/6 & 0 & 1 \\ 1/24 & 1/4 & 1/24 & 2 \\ 0 & 1/6 & 1/6 & 3 \end{bmatrix}$$