

$i \backslash j$	1	2	3	4	5
1	0	120 $k=1$	264 2	1080 2	1344 2
2		0	360 $k=2$	1320 2	1350 2
3			0	720 3	1140 4
4				0	1680 4
5					0

① memo

$$A_1 \cdot A_2 \cdot A_3 \cdot A_4 \cdot A_5$$

Formul

$$M[i, j] = M[i, k] + M[k, j] + P_i P_k P_j$$

$$P_0 \rightarrow 4$$

$$P_1 \rightarrow 10$$

$$P_2 \rightarrow 3$$

$$P_3 \rightarrow 12$$

$$P_4 \rightarrow 20$$

$$P_5 \rightarrow 7$$

$$P_{i-1} P_i P_{i+1}$$

$$0 \leq k \leq j$$

$$k=1 \quad M[1, 2] = M[1, 1] + M[2, 2] + P_0 P_1 P_2 = 120$$

$$k=2 \quad M[2, 3] = M[2, 2] + M[3, 3] + P_1 P_2 P_3 = 360$$

$$k=3 \quad M[3, 4] = M[3, 3] + M[4, 4] + P_2 P_3 P_4 = 720$$

$$k=4 \quad M[4, 5] = M[4, 4] + M[5, 5] + P_3 P_4 P_5 = 1680$$

2. Seize

$$k=1 \quad M[1, 3] = M[1, 1] + M[2, 3] + P_0 P_1 P_3 = 840$$

$$k=2 \quad M[1, 3] = M[1, 2] + M[3, 3] + P_0 P_2 P_3 = 264$$

$$k=2 \quad M[2, 4] = M[2, 2] + M[3, 4] + P_1 P_2 P_4 = 1320$$

$$k=3 \quad M[2, 4] = M[2, 3] + M[4, 4] + P_1 P_3 P_4 = 2760$$

$$k=3 \quad M[3, 5] = M[3, 3] + M[4, 5] + P_2 P_3 P_5 = 1332$$

$$k=4 \quad M[3, 5] = M[3, 4] + M[5, 5] + P_2 P_4 P_5 = 1140$$

$M[1, 5]$

$$(A_1 A_2) \cdot (A_3 A_4 A_5)$$

$$(A_1 A_2) \cdot ((A_3 A_4) \cdot A_5)$$

$$(A_1 A_2) \cdot (A_3 (A_4 A_5))$$

$$(A_1 (A_2 A_3)) \cdot (A_4 A_5)$$

$$(A_1 (A_2 A_3 A_4)) \cdot A_5$$

4. Seize $M[1, 5]$

$$k=1 \quad M[1, 1] + M[2, 5] + P_0 P_1 P_5 = 1630$$

$$k=2 \quad M[1, 2] + M[3, 5] + P_0 P_2 P_5 = 1344 \checkmark$$

$$k=3 \quad M[1, 3] + M[4, 5] + P_0 P_3 P_5 = 2280$$

$$k=4 \quad M[1, 4] + M[5, 5] + P_0 P_4 P_5 = 1640$$

3. Seize

$$k=1 \quad M[1, 4] = M[1, 1] + M[2, 4] + P_0 P_1 P_4 = 1900$$

$$k=2 \quad M[1, 2] + M[3, 4] + P_0 P_2 P_4 = 1080 \checkmark$$

$$k=3 \quad M[1, 3] + M[4, 4] + P_0 P_3 P_4 = 1224$$

$$k=2 \quad M[2, 5] = M[2, 2] + M[3, 5] + P_1 P_2 P_5 = 1350 \checkmark$$

$$k=3 \quad M[2, 3] + M[4, 5] + P_1 P_3 P_5 = 2880$$

$$k=4 \quad M[2, 4] + M[5, 5] + P_1 P_4 P_5 = 2720$$

