

Example $m_1=1, m_2=2, m_3=1$

(16)

Permutations of 1, 2, 2, 3 # of inversions

1, 2, 2, 3 0

1, 2, 3, 2 1

1, 3, 2, 2 2

2, 1, 2, 3 1

2, 1, 3, 2 2

2, 2, 1, 3 2

2, 2, 3, 1 3

2, 3, 1, 2 3

2, 3, 2, 1 4

3, 1, 2, 2 3

3, 2, 1, 2 4

3, 2, 2, 1 5

$$\text{inv}(1, 2, \underline{2}, 3; 0) = 1$$

$$\text{inv}(1, 2, \underline{2}, 3; 1) = 2$$

$$\text{inv}(1, 2, \underline{2}, 3; 2) = 3$$

$$\text{inv}(1, 2, \underline{2}, 3; 3) = 3$$

$$\text{inv}(1, 2, \underline{2}, 3; 4) = 2$$

$$\text{inv}(1, 2, \underline{2}, 3; 5) = 1$$