Wentao Lu

1. $\{1,3,2\}$ $(2,1,3)$ $\{2,3,1\}$ $\{3,1,2\}$ $\{3,2,1\}$

     1   1   2   2   2

   $\{1,2,3\}$

     0

2. $(5,2)$ $(5,3)$ $(5,4)$ $(7,4)$ $(7,6)$

      5   inversions

3.   it is a question about

10	11	12
14	15	

4.   group is a set equiped with an operation that combines any two elements to form a third element while being associative, having an identity element and inverse elements.

5.   i)   identity elements is identity matrix

   ii)   inverse matrix is $AA^{-1} = \begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$

     $A = \begin{bmatrix} a & b \\ c & d \end{bmatrix}$ $A^{-1} = \begin{bmatrix} d & -b \\ -c & a \end{bmatrix}$