Step-1

We have to find the number of exchanges will permute $(5,4,3,2,1)$ back to $(1,2,3,4,5)$

And we have to find the number of exchanges to change $(6,5,4,3,2,1)$ back to $(1,2,3,4,5,6)$, one is even and the other is odd.

For $(n,...,1)$ to $(1,...,n)$, we have to show that $n=100$ and 101 are even, $n=102$ and 103 are odd.

Step-2

First we exchange 1 and 5 then it becomes $(1,4,3,2,5)$, then we exchange 4 and 2 then it becomes $(1,2,3,4,5)$.

It requires 2 exchanges to permute $(5,4,3,2,1)$ back to $(1,2,3,4,5)$

Step-3

First we exchange 1and 6 then 2 and 5 then 3 and 4.

Therefore the number of exchanges to be perform that (6,5,4,3,2,1) back to (1,2,3,4,5,6) is 3.

For $n=100$ there are 50 exchanges and then 51 exchanges for $n=102$ requires.