

# MTH 4441 Homework #8 - Permutations

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Name \_\_\_\_\_

For exercises ??-??:

<sup>1</sup> Express the given permutation on the set  $\{1, 2, 3, \dots, n\}$  into the “product” of disjoint cycles

<sup>2</sup> Express the given permutation on the set  $\{1, 2, 3, \dots, n\}$  into the “product” of transpositions

<sup>3</sup> Classify the permutation as being either “even” or “odd”

1.  $\begin{pmatrix} 1 & 2 & 3 & 4 & 5 & 6 \\ 3 & 6 & 1 & 4 & 2 & 5 \end{pmatrix} =$

2.  $\begin{pmatrix} 1 & 2 & 3 & 4 & 5 & 6 & 7 & 8 \\ 3 & 6 & 1 & 7 & 4 & 8 & 5 & 2 \end{pmatrix} =$

3.  $\begin{pmatrix} 1 & 2 & 3 & 4 & 5 & 6 & 7 & 8 \\ 2 & 7 & 5 & 1 & 3 & 6 & 8 & 4 \end{pmatrix} =$

4.  $\begin{pmatrix} 1 & 2 & 3 & 4 & 5 & 6 & 7 & 8 \\ 4 & 8 & 7 & 6 & 3 & 2 & 5 & 1 \end{pmatrix} =$

5.  $\begin{pmatrix} 1 & 2 & 3 & 4 & 5 & 6 & 7 & 8 \\ 4 & 7 & 1 & 3 & 8 & 6 & 2 & 5 \end{pmatrix} =$

6.  $\begin{pmatrix} 1 & 2 & 3 & 4 & 5 & 6 & 7 & 8 \\ 5 & 6 & 2 & 3 & 1 & 8 & 4 & 7 \end{pmatrix} =$