

Math 361**Quiz 3**

10 points possible.

1. (3 pts.) Find all orbits of the given permutation.

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

2. (3 pts.) Compute the indicated product of cycles that are permutations of $\{1, 2, 3, 4, 5, 6, 7, 8\}$.

$$(1 \ 3 \ 5 \ 2)(1 \ 4 \ 5)(1 \ 3 \ 4 \ 7)$$

3. (4 pts.) Express the following permutation of $\{1, 2, 3, 4, 5, 6, 7, 8\}$ as a product of disjoint cycles and then as a product of transpositions.

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